Fig. 1—Assembling line for automobile frame starts from stockroom shown in upper right hand corner

Riveting of Automobile Frames Is Production Operation

By J. F. Froggett

ENDURANCE demanded of the automobile chassis frame must be positive. Carrying the body, it must withstand unexpected stresses and yet its method of assembly in the shop must be flexible enough to allow for quantity production of fifty or more per hour and yet drop to one-half that output without appreciably increasing costs. Undoubted rigidity must be assured, which involves also stiffness of frame due to the riveting having been done while the component parts of the frame are held temporarily in alignment during the assembly process. Clever utilization of special riveting machines, working equally efficiently from either the right or left side of the frame and driving rivets from above or below are a few features of the methods now in vogue for frame assembly at the Star plant, Lansing, Mich., of the Durant Motor Co. of Michigan. Rigidity of the temporarily assembled frame during the riveting is obtained by means of an ingenious holding device.

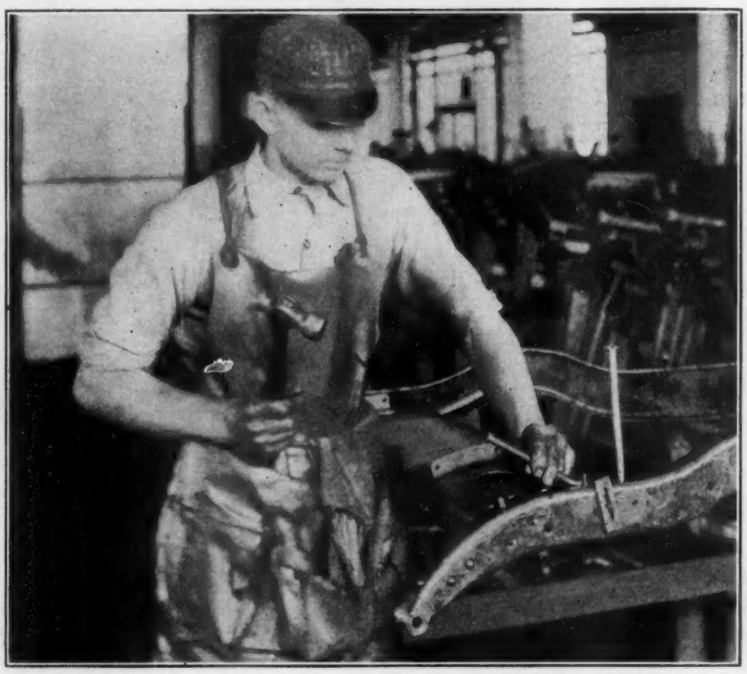


Fig. 2—Rivets are struck to keep them in place until riveted

In this temporary frame assembly are inserted by hand 140 annealed steel rivets, all but six of which are 5/16-inch, and

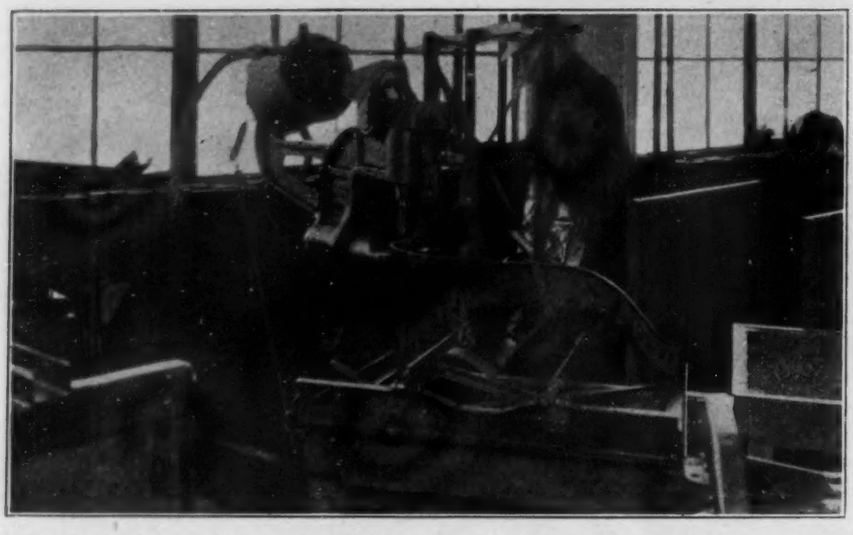


Fig. 3—Sub-assembly corner which is served by the three-part supply table shown in foreground

these six are 3/8-inch in diameter. With the frame moving from machine to machine, each of which heads the annealed rivets cold, these rivets are held in place by each being tapped lightly by a swage which is known as a rivet clincher.

Following the traditional automotive "line" in its assembly, the composition of the built-up frame starts as in Fig. 1 in the upper right hand corner. There the side rails first move out of stock onto a fitting-up stand, which is a skeleton bench formed of steel pipe placed at intervals of several feet at a convenient height from the floor to permit easy working by the assemblers. Conventional cross-members are put in place in the frame and the rivets are inserted, the holes having been previously punched by the manufacturer of the stampings. Dexterous use of the rivet clincher by these assemblers as shown in Fig. 2 insures the rivets being in place when the frame arrives at each of the half dozen riveting machines in its progress through the line.

Meanwhile, in the course of the fabrication, the frame is held rigidly in alignment by the carrier device attached to the temporary assembled frame by four dowel-pins. The carrier frame, which is shown in Fig. 4, is suspended by two wire ropes from a single spiral spring attached to an overhead carrier. From the moment of the completing of the temporary assembly until the last rivet has been headed, each frame travels in this rigid carrier much as in a cradle or jig and never for a moment is its rigid hold relaxed, thus insuring perfect alignment of both side rails and cross members.

Glancing back to Fig. 1, one obtains a comprehensive idea of the progress of the frame through the riveting assembly line. Starting with the temporary assembly of the frame in the portion of the room shown in the upper right hand corner, the frame moves end-on toward the lower left hand corner, following the general line of the building columns. Here are installed the riveters which head certain rivets in the right hand side of the frame. Swinging around on the overhead conveyor to the right preparatory to coming down the line which parallels the windows at the end of the building, each successive operator working either from the top or side, heads every rivet attainable by his individual machine on the left side of the frame and passes it along to the next operator. The frame comes off the end of this line at the upper left hand corner of Fig. 1 completely riveted and ready for the general automobile assembly line.

Just at the turn where the partially completed frame moves toward the window line is inserted a sub-assembly process. This sub-assembly is carried on from necessity, or convenience, outside the frame assembly line but is being incorporated into it as production increases. The sub-assembly unit which supports various portions of power and driving mechanism including the battery box basket, consists of a riveted fabrication of stampings which finally add to the rigidity of the frame. It performs a definite function in the frame assembly inasmuch as the rear motor support and transmission supporting cross member are joined together by the rails supporting the transmission, this forming a substantial structure for holding the transmission in perfect alignment with the motor. One riveting machine serves the entire sub-assembly corner through the aid of another device consisting of a three-part table carrying stocks of rivets, parts, etc. at handy distance for the workmen, as shown in Fig. 3.

All the rivets except two in the entire frame assembly stand in either a vertical or horizontal position ready for the riveting machine and hence are easy of access to the riveter as ordinarily mounted. These two rivets,

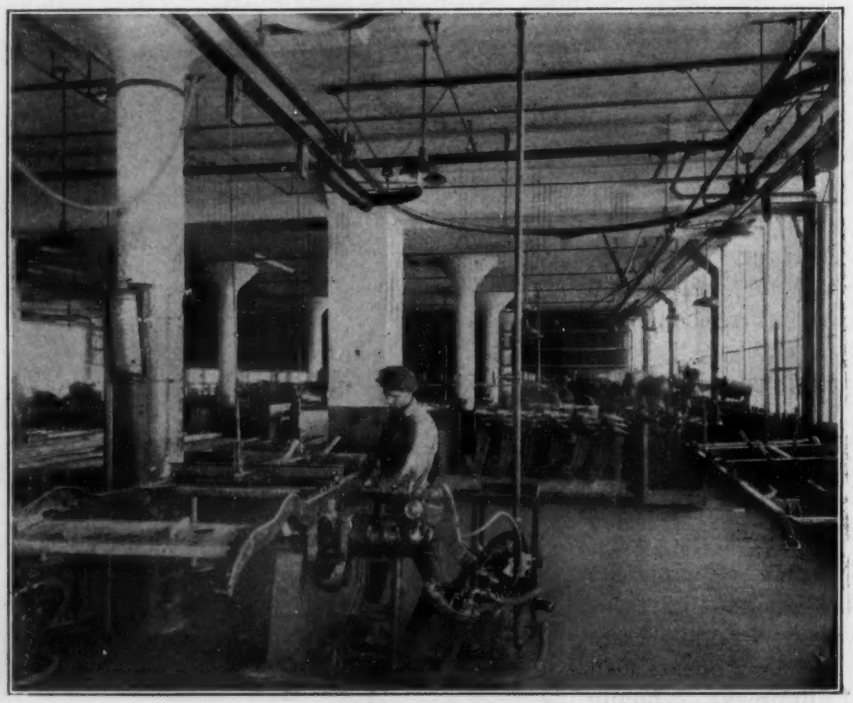


Fig. 4—Suspension carrier for holding temporary assembly rigid during successive riveting operations

one on either side, the last rivets at the rear of the frame, are set at an angle. In order to form a perfect head on these, the riveting machine is mounted upon rockers of parallel channels formed to a 15-degree arc as shown in Fig. 5. By means of a trip, the machine itself, being mounted especially with reference to its center of gravity, is easily thrown out of the vertical position by the operator. It is held in position by the trip until the rivet has been headed and then swung back with one motion into its original vertical position. The machine is swung out of plumb, heads the rivet and is swung back in just a few seconds.

Driven by compressed air, these riveters exert a pressure of 15 tons on the rivet die at 100 pounds per square inch air pressure. The known predetermined and uniform pressure exerted by riveter upon the rivet results in perfectly driven rivet regardless of variation in thickness of parts being riveted. No more pressure need be exerted upon the rivet than that necessary to form the desired rivet head as a reduced maximum tonnage is readily obtained and uniformly retained. Any modification of standard rivet may be had.

Each riveter is manipulated by means of a foot operated "combination" valve. This valve incorporates features of operation, mainly speed, which are desirable. The foot lever extends to one side only of the rocker shaft and is shaped for depression by the operator's heel. The valve operating mechanism includes a spring which is imposed against the effort of the operator's heel in throwing the valve to admit air to the machine for the riveting stroke. This spring is of such strength that upon release of manual effort the valve automatically returns to the extreme opposite position which results in riveting die return. The overall result of this is that for a complete operation cycle manual effort need be exerted in but one direction. In some cases the valve is further modified to include an automatic closing device. This acts to bring the valve to neutral or closed position at the completion of the return stroke of riveter piston, preventing a rise in air pressure on this stroke beyond that required to move the mechanism. A marked saving in air consumption results.

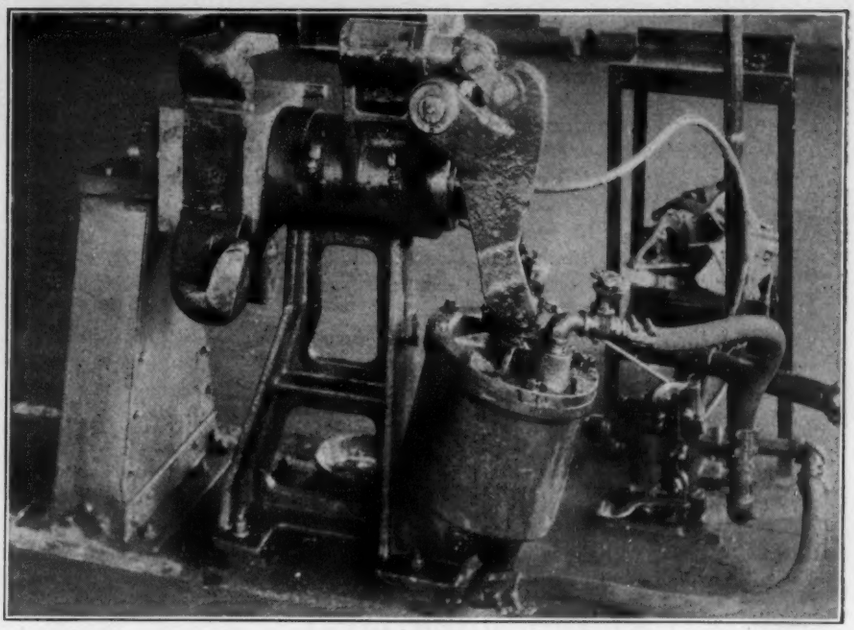


Fig. 6—The anvil shown on this machine has three heads, either of which can be swung into position when desired

Fig. 5—This riveting machine is mounted on a cradle to permit driving rivets at an angle from the vertical

There are five distinct types of riveters in this installation developed strictly for chassis frame riveting. Each type is provided for a distinct class of rivets found in Star and Durant chassis frames. Perhaps the most interesting is the "turret" type riveter shown in Figs. 4 and 6.

The "turret" riveter is an example of adaptability of this equipment. Its outstanding feature is the rotating turret head for mounting four horns or noses and by means of which any one of these horns or noses may be indexed in the position to bring a stationary rivet die thereon into alignment with the movable die mounted on the plunger ram. It is these noses which enter the inside of the chassis frame and must, therefore, conform in shape to the open space inside the frame adjacent and behind the various rivets. The clearance conditions at one rivet are often quite different from those at another rivet which is similar in every other respect and which might otherwise be driven by a riveter with an identical dead leg or nose. From the standpoint of the number or variety of horn or nose clearance conditions which may be met, the "turret" riveter is the equivalent of four yoke riveters of like reach, gap, and tonnage. This machine was fully described in the June 3 issue of IRON TRADE.

The overall height of the riveters

(*Concluded on Page* 1498)

He Was Blind To Steel

A FEW weeks ago, while traveling from Seattle to Boise, Idaho, Lee H. Miller, chief engineer of the American Institute of Steel Construction, and myself were standing on the rear platform of our train, talking to the brakeman, who, in the course of the conversation, divulged the fact that he had been traveling over the route for 25 years, and the additional fact that he had accumulated $25,000, all of which was safely invested. He was, you see, a substantial and intelligent citizen.

As the train passed beneath a highway bridge built of a material that competes with steel, Miller turned to the brakeman and commented on the fact that the competing material had been used in the construction of the bridge.

"Oh yes," the brakeman replied, "all our bridges are built of that. We build the finest bridges in the world out here." Then he went on to say that there was a plant 25 miles down the road that turned out the material used in their construction.

"But why don't you use steel?" Miller asked.

"Because steel crystalizes," was the brakeman's reply.

"What happens when it crystalizes?" asked Miller.

"Why, it falls down," replied the brakeman.

At this point we were passing under a long highway bridge over the railroad. "What's that made of?" said Miller, pointing to the bridge approach. The brakeman named the competing material. "And that," said Miller, pointing to the part of the bridge over the railroad. "Why, steel," said the brakeman in a surprised and slightly aggrieved tone.

During the next half hour we passed under a number of highway bridges over the tracks. Most of the approaches were of the competing material, while most of the sections over the railroad—the sections in which strength and security are particularly essential—were of steel. In each case the series of questions and answers between Miller and the brakeman was run through again.

At about the fourth repetition Miller said to the brakeman, "You've been on this route 25 years, how long have the railroad bridges been here?"

"They were up before I came," was the brakeman's reply.

"Any increase in the weight of the locomotives since you came on the route?" said Miller.

"Sure, the weight has increased about four times."

"But," said Miller, "the railroad bridges haven't fallen down and they are all of steel. How do you account for that?"

"Hanged if I know," said the brakeman.

"Well," said Miller, "I'll make you a bet. We'll soon pass the plant that you say turns out this other material. I'll bet the plant is of steel construction."

The brakeman said he didn't believe it was, but that he'd wait and see. A few minutes later we passed the plant—and Miller was right. The plant was of steel construction throughout.

There was a man, who after traveling over steel bridges for 25 years was blind to steel, but awake to the competing material. Why? The answer is to be found in the contrast between the methods of merchandising followed by the steel industry, and those followed by the industry that manufactures the competing product.—C. F. Abbott.

Steelmakers Products of Con

By Charles F. A

FIFTY years ago, or, indeed, up until the beginning of the World war, merchandising consisted primarily in competition between members of the same industry. Attention was concentrated largely upon production. Little or no time was consumed in considering whether the market for the product as a whole was expanding or contracting. Ignorance of the causes of business fluctuations, of the facts of supply and demand, of efficient business methods, resulted in intense competition within the industry itself.

Today the competitors that manufacturers have most to fear are not those in their own industry. There has arisen a new competition for all lines of business. The real competition is not now between concerns in the same industry, but between different industries meeting similar needs, not for the individual concern's share of the money spent in the industry, but for a proper share of the national income for the industry as a whole. It has come to be accepted that if there is enough for the industry as a whole there will be enough to go around among its members.

New Merchandising Methods

To meet the new competition there have been evolved new principles of merchandising. Based upon the indisputable fact that the public demands those commodities which it knows and has confidence in, one of the most important of these new principles is that any industry which would keep competitive commodities from encroaching upon its territory or which would extend the field of its products, must build up in the general public a consciousness of the merits of its product that will create confidence in the service it can render.

The steel industry may be divided roughly into two main divisions, the hot steel industry which produces the steel from the ore, and the cold steel industry which fabricates the steel for the various uses to which it is put by the ultimate purchaser. Reliance, to a greater or less extent, by both of these divisions of the steel industry upon the merchandising principles of a vanished era, while manufacturers of competing products have been alert to take advantage of the merchandising principles of today, is responsible for the unfortunate position in which many branches of the steel industry now find themselves.

With no intention of offering destructive criticisms, with the idea only of painting the background for constructive suggestions, I may say that the hot steel industry is the only large industry existing today in which there is not universal recognition of the fact that the producer should maintain an active interest in his

The author is executive director, American Institute of Steel Construction, 285 Madison avenue, New York.

Should Follow To Point sumption

F. Abbott

products until they reach the consumer.

The hot steel industry has never taken any interest in its product after it has passed into the hands of the cold steel industry. The hot steel industry has always thought, and still thinks, in terms of tonnage output. Concentration upon the greatest number of tons per man per day has brought about neglect of the market and of all that concerns it.

Constructive advertising to build up a public consciousness of steel has never been applied. In altogether too many instances the sales methods of the hot steel industry are antiquated, obsolete. Its varying prices, established to meet local or special conditions, are a throwback to the old customs of trading, long ago consigned to the scrap heap. Its failure to classify its trade, or to recognize those whose responsibility is certified by the capital invested, as compared to those with little or no financial standing, presents a condition that is far from logical.

The hot steel industry has never assumed the initiative in any effort to extent the use of steel. The development of new uses has been left to the consumer. The railroads themselves are responsible for the use of steel in the construction of freight and passenger cars. The automobile manufacturers assumed the initiative in preparing specifications which they submitted to the mills.

Earnings Far Too Low

How has this concentration upon production, to the exclusion of practically everything else, affected the hot steel industry?

An analysis by IRON TRADE REVIEW of 27 of the more important iron and steel mills shows earnings of $3.80 in 1924 and $4.51 in 1925 for each $100 of aggregate capitalization. An analysis of 12 other important industries shows average earnings of $12 for each $100 of aggregate capitalization. The survey of the iron and steel mills further shows that in spite of the growth in the nation's capacity for consumption, the ability of the steel mills to produce steel exceeds the ability of the nation to absorb it.

Earnings that are so low in proportion to the aggregate capitalization are in great part attributable to this excess plant capacity. Excess plant capacity is frequently referred to as a condition which retards progress in the hot steel industry. Declining markets naturally lead to a condition of excess capacity. If the same importance had been attached to markets as has been devoted to efficient production there would be no excess capacity in the hot steel industry.

But while we of the cold steel industry may be censured for not having taken more immediate advantage of the principles of modern merchandising, we are still, in this respect, far in advance of the hot steel industry.

The manufacturers of sheet steel, whose steel roofing a few years ago was being displaced by a competing product at the rate of thousands of tons a year, are checking the invasion of their territory and extending their field. The fabricators of struc-

What Institute Is Doing

1. Enlisting the aid of the country's ablest engineering talent, the institute developed standard specifications for the design and erection of structural steel. These specifications are based on a unit working stress which makes possible a saving of 12 per cent in the amount of steel needed for any building, while other provisions eliminate unnecessary rivets and unnecessary paint between points of contact and add substantial quotas to an economy which will amount to $50,000,000 annually when the specifications are operative throughout the United States.

2. Following a year spent in research, compilation of data, etc., the institute drafted a code of standard practice to clear up sources of misunderstanding between the buyer and seller of structural steel. The code leaves no opportunity for confusion as to what items are to be delivered under an order for any specified class of material. It also clears up the question of invoice weights, defines what constitutes a plumb building, outlines the manner of compensating for and adjusting delays, etc.

3. The institute has been active in calling attention to the specifications and code. As a result, these specifications are now in use in 59 large cities and a number of states, while their adoption has been recommended in 40 additional major municipalities. The code of standard practice is widely used. Educational meetings have been held in 21 large cities, in technical schools and before chambers of commerce and technical societies.

4. The institute is preparing a handbook to facilitate work of designers and draftsmen and to assure correct design. The distribution of a standard sales manual for the entire industry already has been begun.

5. The institute is encouraging research and promoting the development of new markets. The development of steel frames for dwellings has been one of the institute's most significant contributions. It is pointed out that the beams and girders alone for a $15,000 home will aggregate 3½ tons. When it is considered that the number of dwellings erected last year was 296,000, it is easy to understand the importance of this new market for steel.

6. The institute is planning the organization of a corps of field engineers and a bureau of architectural relations which will enable the institute to work in closer contact with engineers, architects and the faculties and students of technical schools in solving the problems of modern steel construction.

7. The institute recognizes the value of national advertising as a part of its educational program. It forms one of the principal planks in the platform, to be called into play at the earliest possible date. National advertising must be relied upon to a great extent to arouse a consciousness of the part played by steel in modern civilization, and a like consciousness of its inherent qualities which make it the ideal material for so many purposes.

tural steel are laying a firm foundation for the recovery of the market encroached upon during the old days of disorganization.

This come-back on the part of two branches of the cold steel industry has been brought about by means of industrial group co-operation which, functioning through trade associations, has made possible the application of those merchandising principles that have proved their worth.

The American Institute of Steel Construction, the association of the structural steel fabricators, and the Sheet Steel Trade Extension committee, the association of the sheet steel manufacturers, are not associations based upon the "pay a few dollars a year and forget it" theory, or upon mere attendance at an annual meeting. They are trade associations functioning along three main lines:

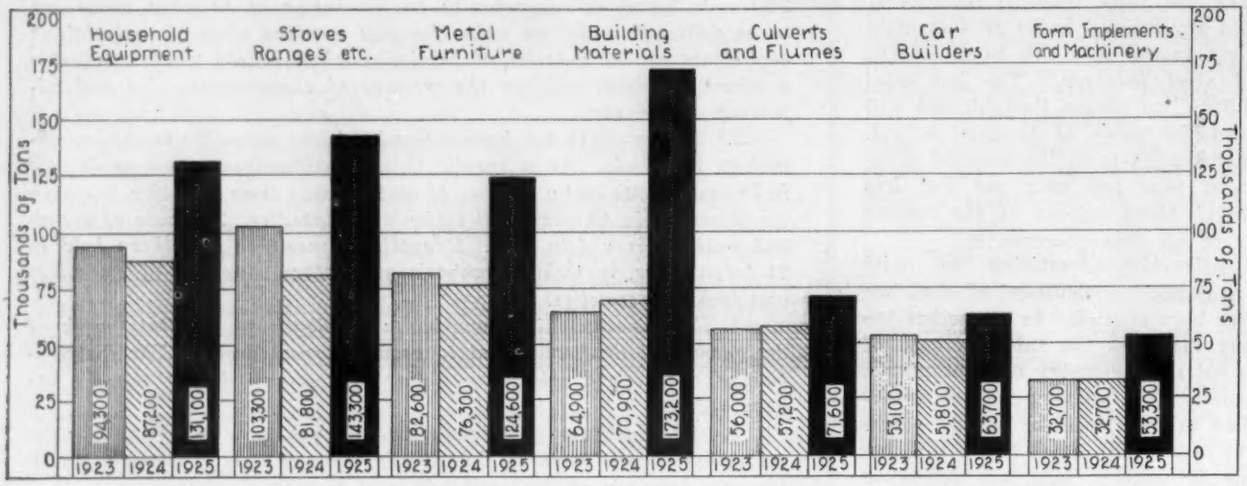
1. Standardization to eliminate waste in production and to promote the most efficient use of the product.
2. Research to develop new uses for the product and new markets.
3. Creation of a public consciousness of advantages of the product:

(At this point Mr. Abbott outlined the work of the American Institute of Steel Construction, discussing the seven points summarized on page 1493.)

The cold steel industry looks forward eagerly to the time when the hot

(Concluded on Page 1502)

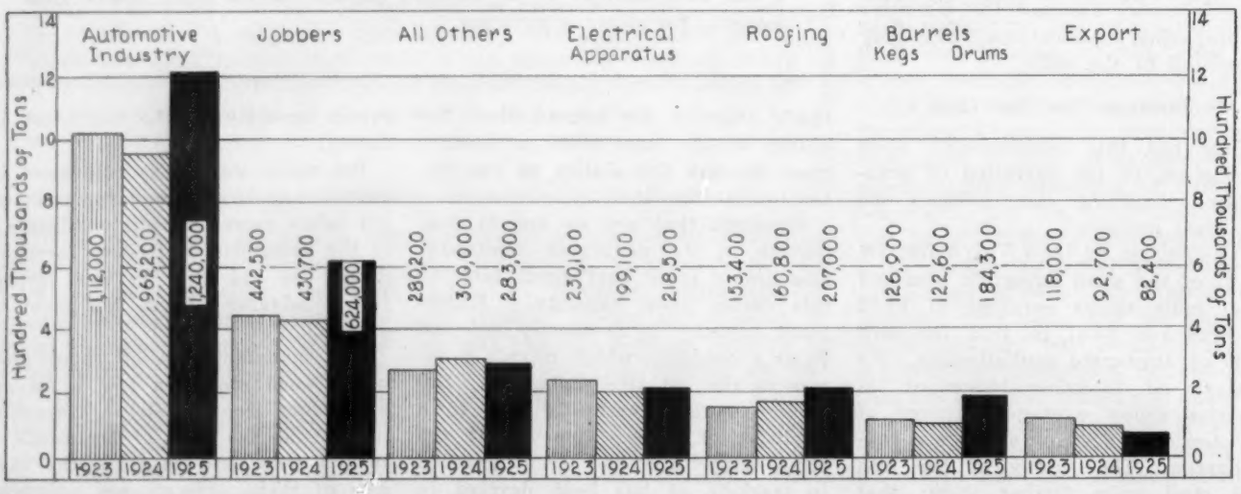
THE accompanying article is from an address delivered June 1, 1926 *at the annual meeting of the American Boiler Manufacturers association, Hot Springs, Va.*

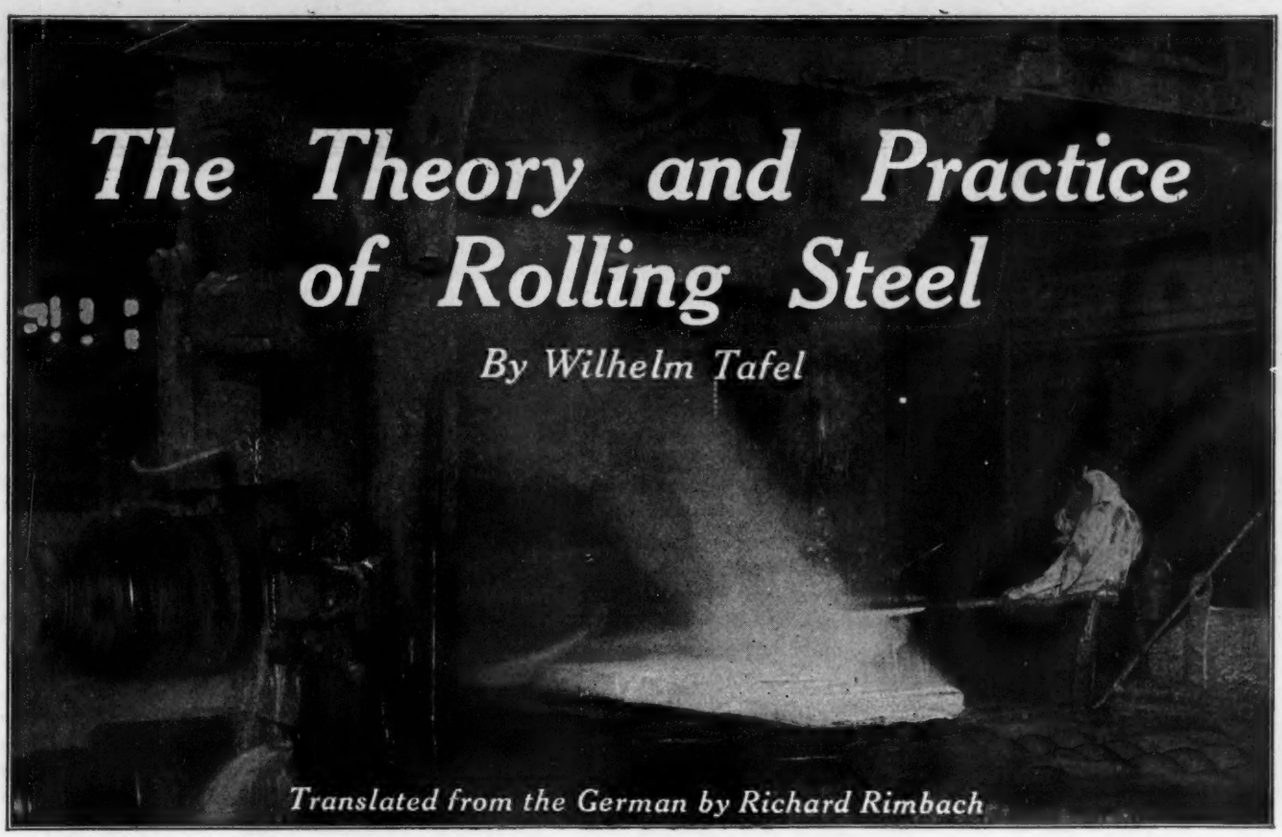


Automotive Industry Largest Sheet Consumer

CLASSIFICATION of sheet steel shipments for 1925, *according to data submitted by W. S. Horner, president, National Association Sheet and Tin Plate Manufacturers, at the fourth annual meeting of Sheet Steel Executives, White Sulphur Springs, W. Va., discloses the automotive industry as the largest single consuming unit in the numerous groups. Last year, according to Mr. Horner, this group took* 34.5 *per cent of all sheet steel produced by independent companies, as against* 35.3 *per cent in* 1924 *and* 37.7 *per cent in* 1923.

While the total shipments of sheet steel for the group of independent companies reporting, was 32 *per cent larger in* 1925 *than in* 1924, *the increase registered by the automotive group was* 29 *per cent. As against this, the tonnage of sheets used in the manufacture of household equipment increased* 64 *per cent; metal furniture,* 52 *per cent; farm implements and machinery,* 63 *per cent; barrels, kegs and drums,* 50 *per cent; building materials,* 44 *per cent; stoves, ranges, etc.,* 41 *per cent. Jobbers took* 17.3 *per cent of the sheet tonnage in* 1925 *and* 15.8 *per cent in* 1924. *The upper chart depicts shipments in thousands and the lower in hundred thousands of tons.*





The Theory and Practice of Rolling Steel

By Wilhelm Tafel

Translated from the German by Richard Rimbach

Chapter V—Continued

PULLING along has not been considered in the present pass design. The roll diameters are assumed to be from eight to ten times the height of the profile, which equals or approaches 19.685 inches, in order to be able to neglect the pulling effect. If the diameters were smaller, the corners of the web, due to the pulling along, would shrink and, therefore, would not fill completely. A larger indirect draft or smaller fillets, therefore, must be provided at those places. The fillets are only definitely determined after the first setup of the rolls, so that the consideration of the pulling along can be combined with this correction. With especially small diameters the fillets might no longer be sufficient for adjustment, so that compensation for the pulling along should be made at the beginning by increased indirect draft.

Gripping of the rolls, in the bell pass is assured because of the 40 per cent draft. The draft from the first into the second pass is (0.709÷1.142) × 100 equals about 60 per cent. This is about 10 per cent too much. In order to have better gripping either the web is made conical, about 0.433-inch on the left, 0.669-inch on the right equivalent to about a 50 per cent draft; or, indentations are provided on the rolls in the train.

The essential point of the pass design under consideration is, that the parts of the profile subjected to the wedging-in are held back 5 to 10 per cent in elongation, but that up to pass No. 2 the total elongation in all parts of the cross-sections is the same. This latter compensation and the one from pass to pass may be obtained by making a greater use of the retardation. In fact that often is done in practice.

Even if the strains in the whole process can be equalized, they are large in the individual passes. Crop ends, increase because the stock becomes defective at the ends for a greater length and secondly, because with such pass designs the lengths, which can be rolled, are shorter. Strains with cross-sections subjected to unequal draft increase from foot to foot, and therefore under certain conditions may be safe at 49.213 feet. With 82.021 feet though tearing or a sudden slip in the rolls may cause a defective place in the stock. This explains why improperly designed passes will work without difficulty, if the lengths of the stock are chosen small enough. In perfect pass designs the length of the stock can only exert an influence, in as far as the rolling temperature is dependent on it. Another important point is, that shaping is carried on mainly in pass 2.

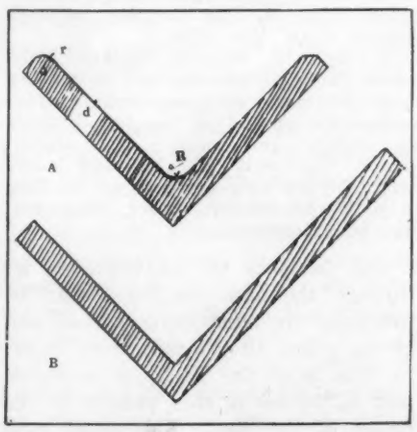


FIG. 130—TYPES OF ROUND AND SHARP CORNERED ANGLES. $R = (D \div 2)$, $R = D$

An angle consists of two rectangular cross-sectional parts perpendicular to one another; one part always gives the other stiffness against lateral bending. A round-cornered angle is shown in Fig. 130*A*, and an unequal-legged, sharp-cornered angle in Fig. 130*b*. Other types include sharp-cornered, equal-legged and unequal-legged angles.

As previously shown the tee is entered in the first pass with a square

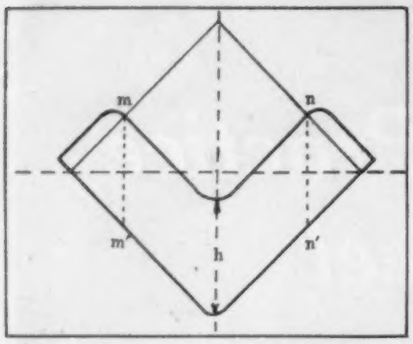


FIG. 131—DIAGRAM OF A SQUARE ENTERED DIAGONALLY INTO AN ANGLE PASS

or approximately square cross-section, in which one diagonal is placed vertical and the other parallel to the roll axes. The largest draft is in the center. The square profile fitted itself to some extent into the bell pass, which also had its largest height in the center and its smallest heights in the perpendicular ends to the right and left. Different conditions maintain with the angle iron. If a square were to be entered in the first pass as shown in Fig. 131 the relation of the draft in the center to that at the ends would be more unfavorable than in the bell pass. According to the figure the pass would be so large, that the square billet probably would no longer be gripped by the rolls. On the other hand there would be no draft to the left of *mm'* nor to the right of *nn'* and the legs would be empty. The underfilling probably would extend beyond these lines toward the center, because the outer cross-sectional parts are pulled along by the heavier draft in the center. At any rate a crippled section in place of a full first pass will leave the rolls. According to the theoretical investigations on the filling of a pass, nothing is to be gained by raising the roughing roll to give more iron; nor would the addition of one or two roughing passes help. In fact, the draft in the center would be reduced. While the rolls would grip better the ends of the legs would receive still less draft because their height increases the same amount as the center, and therefore the legs would underfill over a still larger area. Such a method of entering therefore is not advisable. The billet from the roughing rolls should be entered flat into the first angle pass according to Fig. 132.

In the center and at the ends of the angle, as shown in Fig. 132, a thickness of material, *e*, must be disdisplaced. As they lie on different sides of the leg, the work of bending up the square to the angle must also be performed. A bending or folding-up of a profile often is a necessity or an aid in roll pass design. It is indispensible with the so-called backed off, that is, profiles in which one cannot get into with the roll, as for example the hook-plate profile shown in Fig. 133. The horn, *b*, first is formed straight as indicated by the dotted line and the last pass is used to bend the horn into the position *a*. The draftless bending or folding avoids the danger of tearing especially if the stock is already cold. Where the folding cannot be eliminated it is advisable to allow more iron in the shaping pass at the particular place, similar to the blacksmith who upsets a bar he wants to bend. The same purpose can be accomplished, if while bending, the whole leg can be given draft, as is possible with the angle pass. Two disadvantages remain, however, even though the danger of tearing open is avoided.

1. The place, where the material bends upward is not exactly fixed.

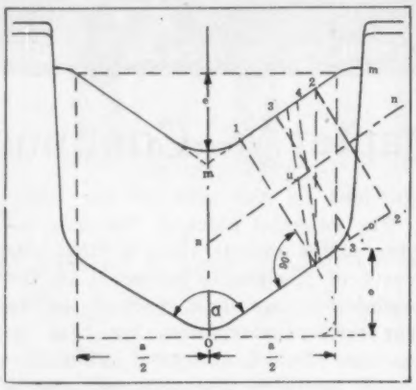


FIG. 132—DIAGRAM OF A BILLET ENTERED FLAT INTO THE FIRST ANGLE PASS

In Fig. 133 for instance, as the square is narrower than the angle pass, there is no assurance that it will bend up exactly in the middle. Therefore, such profiles have a tendency to go through the pass one-sided, that is, the one leg becomes longer than the other.

2. By the bending upward, the outer fibers of the leg are in tension and the inner in compression. This makes the spread of the leg difficult to judge, and causes the angles, which the ends of the legs make with the leg axis to change. If they were perpendicular before, they will not be afterwards.

The tendency of an angle to go through the pass one sided may be prevented by eliminating spread and giving about 10 per cent more taper. In this way the stock is centered, that is, forced to stay exactly in the center of the pass. This object cannot be accomplished by closely set guides because a certain space always intervenes between the guides

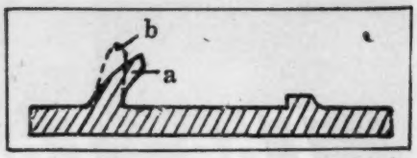


FIG. 133—DIAGRAM OF A HOOK-PLATE PROFILE

and the rolls. The space is sufficient for the stock, which, as was previously mentioned, is also always subjected to certain sideward forces acting in the roll plane. The stock, therefore, gives away against one side of the pass and fills unequally.

Another method for centering is the so-called butterfly method. The bending up is transferred from the point of the angle to be folded toward the center of the leg as shown in Fig. 134, or is distributed over the whole length of the legs as shown in Fig. 134. In both cases the angle α at the vertex is 90 degrees before folding up; it takes no part in the bending up but helps to hold the bar in the pass. The advantage of the first method is the slight influence on the angle β at the corners as shown in Fig. 134 and consequently the ease of obtaining right-angled sharp-cornered legs.

Disadvantages of these pass designs are that they tend to break at the bent portion, or to draw or leave linear marks if the breaking effect is counteracted, by giving draft. Moreover, such profiles, usually are broader before bending up than before the following pass and, therefore, are inconvenient to enter into the gap of the rolls. They must be guided into the pass at an angle and since this position is difficult to judge exactly, the advantage of centering again is endangered. For these reasons the bending-up de-

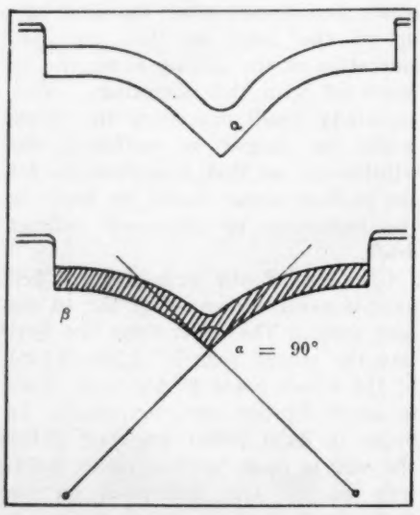


FIG. 134—DESIGN FOR BENDING UP ANGLE LEGS

sign seldom is used in pass layouts.

The bending up action with the flat entering of the square cross-section coming from the roughing rolls, is unavoidable at any plane of the angle pass design and can be reduced since it is done in several steps, progressing from pass to pass. The apex angle, a in Fig. 132, is made larger than 90 degrees in the first pass and is reduced from pass to pass so that it becomes a right angle in the last or better in the next to the last pass. To avoid any pulling or influencing of the edge of the legs and to obtain an exact dimensioned product no bending should be done in the final pass,

Kirchberg suggests, in designing backward from the finishing profile, to increase the apex angle 5 degrees in each pass. Geuze advises, to choose from 142 to 145 degrees for the first pass and to divide the remaining 52 to 55 degrees among the different passes proportional to the

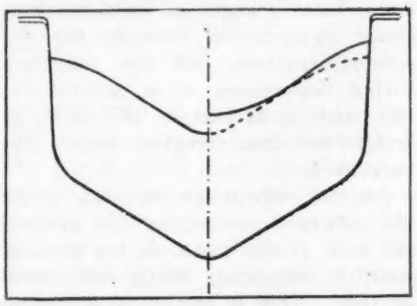


FIG. 135—SCHEME FOR ADDING MORE STOCK TO AN ANGULAR PROFILE

drafts. For the four last shaping passes the drafts, which are the differences in the leg thicknesses, are chosen 0.098, 0.315 and 0.728-inch while the draft from the square to the first pass amounts to 1.457 inches. This gives a total of 2.598 inches. Accordingly, the angle, a, in the fourth pass equals 90 + 55 (0.098 ÷ 2.598) which equals or approaches 92 degrees. As previously mentioned it is advisable to make it 90 degrees. The angle in the third pass equals 92 + 55 (0.315 ÷ 2.598) or 99 degrees; in the second pass it equals 99 + 55 (0.728 ÷ 2.598) or 114 degrees; and, in the first pass 114 + 55 (1.457 ÷ 2.598) or 144 degrees. This method has advantages because the bending-up can be accomplished without danger, the more draft that is given. Moreover, the 55 degrees is more equally distributed over the different passes.

As previously mentioned the centering can be achieved by making the previous pass as broad as the one to be entered. Spread, however, is given because the width in question is that of the whole pass measured at the rolling line. On the contrary the spread refers to the single legs; it is the difference of their lengths and is measured in the direction of the leg. It may be different for the top and bottom of the leg. A series of movements such as the bending up and the pulling along to which material is subjected when leaving the rolls on its top and bottom side, tend to keep the spread of the angle legs low. For an angle 90 degrees it can be set at about 20 per cent of the normal spread of a simple rectangular cross-section and 50 per cent for an angle 145 degrees.

Some roll designers refer the spread to the neutral axis of the legs, nn' in Fig. 132. They make the length of the leg nu equal to half the side of the square, draw the edges of the legs, 3—3′, perpendicular to this and consider the spread by a corresponding parallel displacement of this line to the right. This presupposes, as the figure shows, a considerable elongation of the bottom fibers, oo', and a corresponding diminution of the upper fibers, mm', as a consequence of the bending up. Both procedures actually happen, but are not pronounced.

Another Plan Possible

Another method is to handle the top and bottom fibers separately and to assume for the former the point, m, and for the latter o as pivot. On the bottom side the relations correspond nearly to the actual; the upper fibers vary.

Roughly, the total following pass is taken as broad as the previous one and according to the foregoing, the diminution resulting from the bending up, is substituted for the spread.

It would be more exact to assume for the pivot of the bottom fibers the point o and to give it, according to the steepness of the angle, a spread ranging from 0.2 to 0.5 of the normal or from 0.07 to 0.175 of the draft. An average between the first two mentioned methods should be taken for the top fibers. With the spread set equal to o, the first would give a length of leg equal to $m3$ and the latter to $m2$. Without spread the ends of the upper fibers would come between 2 and 3, that is, at 4, as shown in Fig. 132. To the resulting leg length, $m4$, there is still to be added the spread, as previously stated, and, the bottom and top ends of the legs found in this way to be connected. Thus the edge of the leg after the pass is found.

Draft and fillets for the legs can

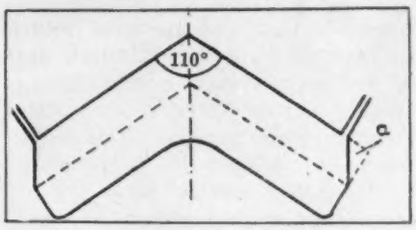


FIG. 136—SHAPE OF ANGLE AFTER THE SECOND PASS

be taken from Table II for flats, in as far as it is the purpose of fillets to prevent the formation of fins. Fillets, required by the shape of the finished profile as shown in Fig. 135, must have their radius increased with increasing leg thickness, and at least in such amounts, that the same percentage of draft exist at the fillets as in the rest of the leg. It is better, in the former case to have the radius somewhat larger at the fillets to prevent the accumulation of scale.

If the pulling along, due to the unequal working diameters, is to be considered, more stock must be added at the ends of the legs and in the center of the pass as is the case at the right side of Fig. 135. This often was done at the ends but it is preferable to make the outline straight, as shown at the left of Fig. 135. The correction would be small, as shown in the previous calculation and besides the relations with the changing predomination of the working diameters is not wholly explained.

The opening in the first pass generally is taken as in Fig. 135. The second pass purposely is turned to enable the corners at a to be pressed as shown in Fig. 136. These preserve themselves in the remaining shaping passes, so that the opening always can be put in the same place or, according to Fig. 137, on the outer side of the angle. The opening, according to Fig. 135, no longer is permissable, because it prevents square edges.

The slight spread in the last passes may be neglected; the finishing passes for the heavier angles can be used as the shaping passes for the lighter angles. Three finishing passes 0.197-inch, 0.236-inch and 0.315-inch

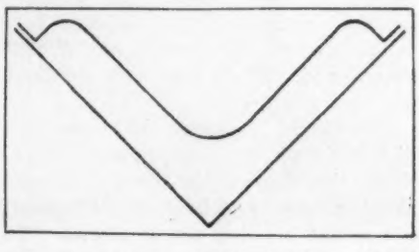


FIG. 137—SHAPE OF ANGLE AFTER THE LAST PASS

thick are provided, all with the same length of legs, and the final rolling is done either in the 0.315-inch pass or the section leaving this pass is entered in pass 5 and 6 where these thicknesses are required. This is preferable to raising the rolls because in the latter method with the increase in leg thicknesses, the length of the leg also increases. Rolling angles of different thicknesses in the same finishing pass gives inexact leg lengths as a result.

To hold the legs closely to dimensions and to prevent underfilled edges, the passes should permit the formation of overfills, which then can be cut off after cooling of the stock by a machine for removing fins. The removal of fins also can be combined with the cold straightening, which is unavoidable because of the crooking of the angles on the hot-bed.

Conditions applying to unequal-legged angles are exactly the same as with equal-legged angles, with one exception. With the latter type the lateral forces neutralize each other while with unequal-legged angles the larger leg offers greater resistance to the material displacement than the shorter. This condition influences the rolls to give sidewise in such a way that the long leg becomes thicker. To compensate for the influence on the thicknesses, a heavier draft must be given in the shorter leg than in the longer, according to the size and the thickness of the profile.

It must be obvious that angles offer serious difficulties. The flow procedures in these profiles, which are simultaneously influenced by the draft; the pulling along and upsetting due to the bending up; and, the difference of the working diameters in the bottom as at the ends, are extraordinarily complicated. It, therefore, is not advisable to design angles as flats in tables. Regular pass drawings must be made. Each pass should be traced and laid on the previous and following passes, as was shown, assuming the pivot for the bending up of the legs above and those below and remembering that the upper fibers are upset with this method. By this arrangement sharp ends perpendicular to the legs, exact dimensions, and, filled leg ends without fins are possible.

Open and straight channels are distinguished by the pass designs. With the former the flanges in the shaping pass are bent slightly similar to the bending up of angles. To hold a right angle between the flanges and the web necessitates arching the

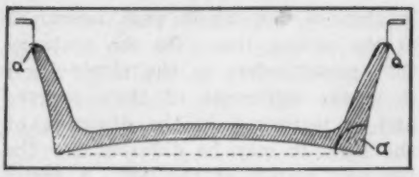


FIG. 138—DESIGN OF AN OPEN CHANNEL PASS

web in a bow shape as shown in Fig. 138. The object of the bending up is to permit roundings off at *a* and to prevent fin formation in event the opening of several passes following in rotation is put at the same place. The larger the angle, ^{a}, that is, the inclination of the flange to the inner horizontals, becomes the greater the amount of folding that can be obtained. That is the reason channel passes can be designed by this method without turning. This is desirable because the turned-up channel pass will wedge in much easier in the cut-in sections that are worked by direct draft than the tee. To avoid this, as with the tees, small draft must be used in the final passes. This increases the strain between the heavier stressed web and the flanges, which cannot be compensated for and neutralized with the flat-lying channel pass as compared with the tee turned 90 degrees from time to time. The advantage of the open pass design, therefore, is that it requires less passes, because indirect draft is used in each pass, and consequently, promotes a better development of the flanges. Therefore, wedging-in and collaring will not be encountered. The disadvantage is, that as the flanges always are open at the same place, it is difficult to develop their heights equally and their ends sharp and clean. This latter disadvantage is avoided by the straight pass design, which in the turned passes, always upsets the flanges to the exact size and, facilitates smooth underfilled or overfilled corners. In addition less space is required on the rolls.

Chassis Frame Riveting on Production Basis

(*Concluded from Page* 1491)

is but slightly greater than the height of the work. This is a desirable feature in floor layout and material handling as the work can move over the riveter, and in zone of effectiveness of operator as he reaches over instead of around the machine. They may be mounted in such a variety of ideal positions that the chassis frame may be passed through them or over them with the maximum rapidity. Speed of operation of the riveters is such that more than sixty complete cycles of operation can be performed in one minute. The riveters have a wide range of utility as is evidenced in the comparatively small number needed for a lineup. Chassis frame design changes are, therefore, not likely to make them obsolete. The peculiar characteristics of riveting die stroke eliminate shock loads on the die, resulting in low die maintenance.

Expert assemblers and operators are not required in the chassis frame assembly line. The assemblers and operators are unskilled men recruited in Lansing or off the neighboring farms. They master the rudiments of the job in a few days and quickly get into production in full swing.

The advantages of automotive manufacturers fabricating their frames are claimed to be—a more direct and positive control of the quality and accuracy; increased volume of productive labor improves relation of direct labor charges to fixed charges; closer co-operation between the designing engineer and the manufacturing department is a natural result and a saving in the item of freight as when complete frames are purchased.

Another advantage is that under the pressure exerted by the riveter, the flow of the metal in the rivet is positive, completely filling the punched hole. This is easily demonstrated by cutting off the head of a rivet and then cutting out the shank of the rivet. Hence it is believed the rivet head might be sheared off in actual use of the automobile and yet the shank of the rivet would hold the component parts in place just as securely as if the rivet head remained.

The factory managers believe that the riveting process assures a flexibility of operating organization which can be expanded or reduced at will merely by putting in or taking out of operation any number of riveting machines. The riveting machines were built by the Hanna Engineering Works, Chicago. They are intended exclusively for complete chassis frame riveting.

Recently elected officers of the Cincinnati chapter of the American Society for Steel Treating are as follows: Chairman, W. R. Klinkicht, engineer of tests, Pollak Steel Co.; vice chairman, A. J. Lucas, Cincinnati Gear Co.; and secretary-treasurer, Fred L. Martin, assistant secretary Cincinnati branch, National Metal Trades association.

Ingot Mold Plant Starts Operation

Initial Unit Recently Established in Chicago District Will Produce 15,000 Tons Monthly—Hot Metal Is Secured from Nearby Stack—Description of Plant and Methods of Molding Are Presented

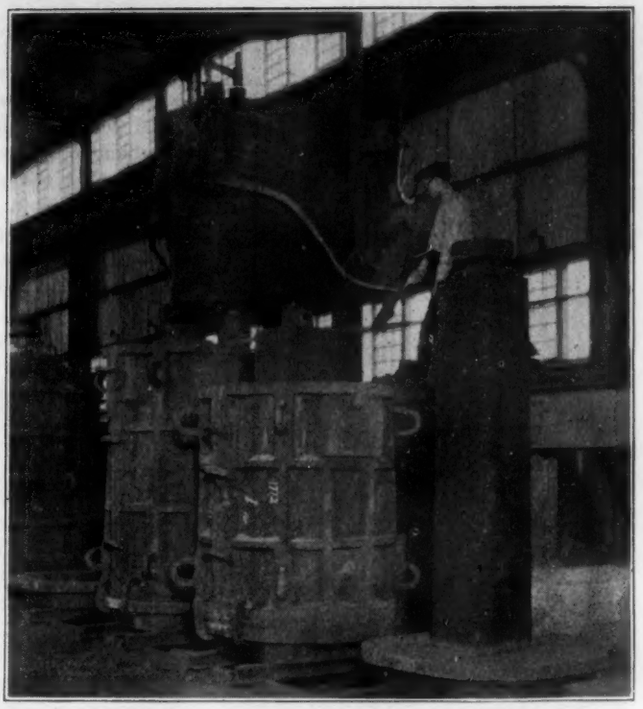


Fig. 2—Casting Platform Showing the Gate on a Flask Being Poured. The Core in the Foreground Is Ready To Receive a Flask

FOLLOWING the completion of the South Chicago plant of the Valley Mould & Iron Corp., Sharpsville, Pa., ingot molds now are made for the first time on a commercial basis in the Chicago district. It is the first plant of the kind west of Pittsburgh and may be regarded as an indication of the growth of the steel industry in the central west.

Erected close to the two Federal stacks of the By-Products Coke Corp., at East 108th street and the Calumet river, the plant is in a position to secure hot metal readily and to share in the advantages of a joint power station. Less than 1000 feet separate the casting platform in the foundry from the cast house at the blast furnace. At present the plant is designed, equipped and operated on an out-

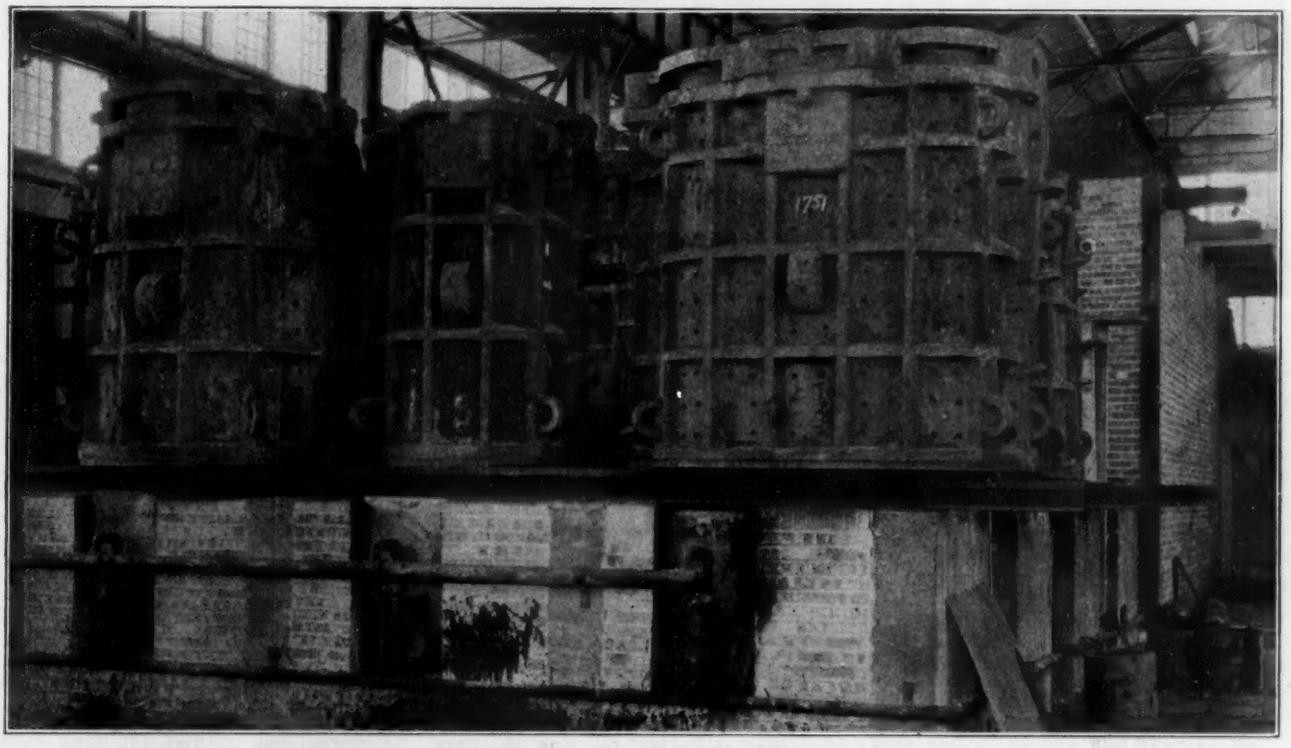


FIG. 1—ALL FLASKS FOR THE MOLDS ARE DRIED OVER INDIVIDUAL OIL BURNERS AFTER LEAVING THE RAMMING PLATFORM AND BEFORE GOING TO THE CASTING PLATFORM. AT THE REAR OF THE FLASKS ARE THE OVENS IN WHICH THE CORES ARE DRIED

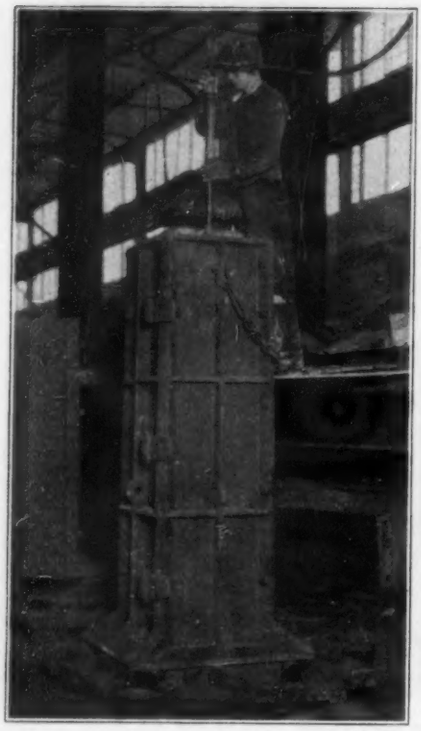


FIG. 3—CORE BOX CLOSED AROUND THE CORE BAR AND THE CORE BEING RAMMED

put of 15,000 tons of ingot molds a month. Ultimately the capacity of the plant will be 25,000 tons a month.

The main building of mill type construction and with sheet steel sides and roof, parallels the Calumet river for 816 feet. The structure is 60 feet wide and is flanked by three side bays, one 30 x 288 feet for sand handling; one 70 x 140 feet for a green sand foundry where stools and equipment are made; and, a third 70 x 196 feet devoted to the storage of equipment, a machine shop and a chamber for the air compressors.

The long main building favors the location of equipment for straight line operation starting at the end nearest the blast furnaces. Ramming, drying, casting, stripping, cooling, cleaning and shipping follow in regular order and are expedited by two 20-ton and two 25-ton cranes in the main bay.

In recent years the ever increasing demand for highly finished sheets, cold rolled stock and material suitable for deep drawing and pressing has been reflected in the methods adopted in the manufacture and design of ingots. The steelmaker has found that the shape of the ingot and the design of the ingot mold exert a marked influence on the resulting product. Designing ingots and ingot molds is as highly specialized as the designing of rolls. The steelmaker is cooperating with the ingot mold manufacturer in the production of molds that are properly balanced. It is claimed that the new plant of the Valley corporation is equipped throughout with carefully designed and substantially constructed molding equipment to assure accurate taper and uniform wall thickness in the molds. Typical pieces of equipment and method of application are shown in the accompanying illustrations.

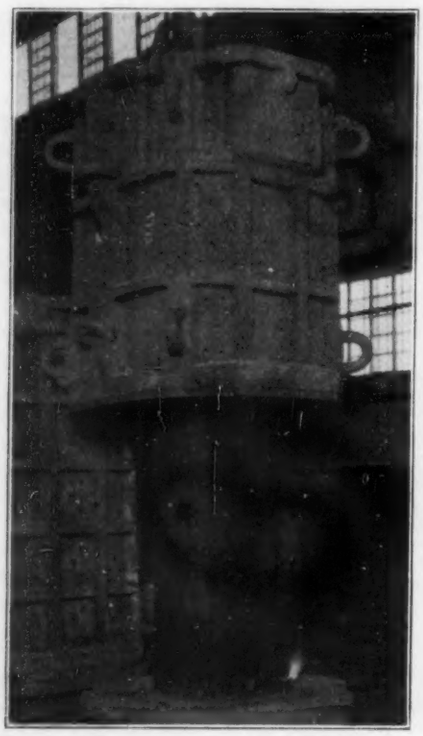


FIG. 4—FLASK AFTER LEAVING DRIER BEING LOWERED OVER CORE AT CASTING PLATFORM

Equipment Is Substantial

One of the core barrels, shown in Fig. 7, is smeared with claywash or paste and, therefore, the numerous vent holes are concealed. A square tapered trap at the bottom of the barrel is rammed full of sand to form a sand bottom for the mold. Several fitting strips on the outside of the base guide the barrel accurately, first into a recess in the base of the corebox and later into a similar recess in the base on which the mold is assembled for pouring. One of the cores in the latter position is shown in Fig. 5 and another in Fig. 4.

General features both in construction and method of operation of the cast iron, two part, hinged corebox may be noted in Fig. 7. The two parts are pivoted on a suitable pin at the back and the weight is supported on several small rollers on the base while the two halves are opening and closing. A dowel pin set in a central block at the front of the base limits the travel of each half. The two halves are held together during the ramming operation by three clasps on one half of which engage three corresponding projections on the second half. This feature is illustrated more clearly in Fig. 3.

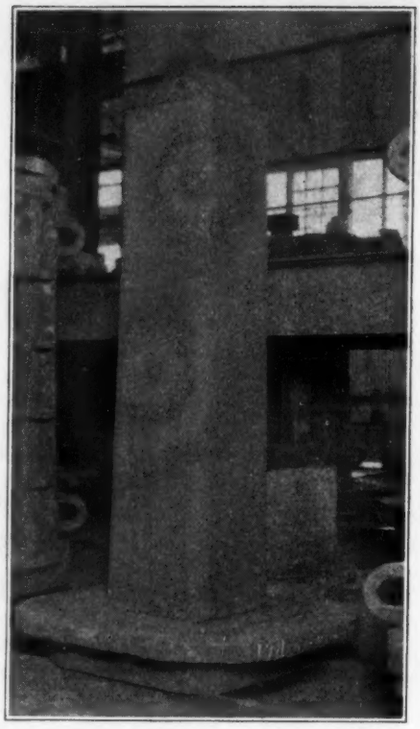


FIG. 5—A CORE AT THE CASTING PLATFORM READY TO RECEIVE ITS FLASK

A pneumatic rammer with an extension shaft is employed to ram the sand. The upper end of the rammer

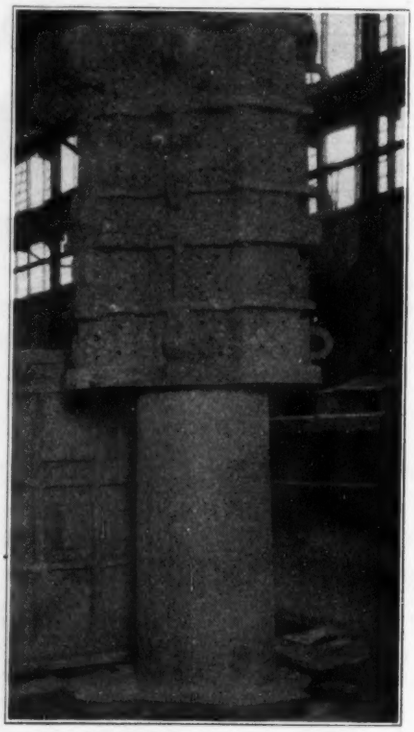


FIG. 6—FLASK BEING LOWERED OVER THE PATTERN AT THE RAMMING PLATFORM

is attached to a small rope which runs over a pulley to a counter weight. This balanced arrangement takes most of the weight and strain off the hands of the operator. One man rams the core while two men usually are employed on the mold.

Sand is prepared in the bay adjoining the main bay where the molds and cores are rammed. Sand from the shakeout station is lifted by a ¾-yard clamshell bucket attached to a 10-ton crane and deposited in a screen and mixer made by the Stephens-Adamson Mfg. Co., Aurora, Ill. The proper amount of new sand is added to each batch. From the mixer the tempered sand is dropped into a concrete bin, then elevated and passed through a muller made by the National Engineering Co., Chicago. Discharged from this machine the sand is again lifted in the clamshell and deposited on the platform where the ramming crew stand in a row back of the molds and coreboxes.

Molds Are Dried

After the cores are rammed they are carried by the crane to the finishing rack where they are blacked and slicked and then are lowered into the core ovens shown at the right in Fig. 1. Instead of resting on their bases they are suspended by the necks from suitable hooks or by bars placed under the shoulders. Four ovens, each with a capacity of eight normal cores, are provided. The ovens are oil fired and are provided with roller bearing covers easily operated by the men who attend to the loading and unloading. The ovens are kept at a temperature between 500 and 600 degrees Fahr., which is sufficient to dry the cores in from 3 to 4 hours. The dried cores are taken to the casting station where they are lowered into the bases referred to previously and which automatically center them in relation to the cheeks or jackets.

Ingot mold flasks are split in two to facilitate removal from the casting. Some are assembled as single as shown in Fig. 2 while others are built up of two or more sections as may be noted in Fig. 6. A substantial steel stripping plate is attached to the bottom of the flask to insure a clean lift from the stationary pattern. This plate also is provided with dowel holes to fit over dowel pins in the pattern base plate and corresponding pins in the base on which the mold is assembled. The pins are short and pointed.

After the cheek is rammed it is lifted from the pattern and carried to the finishing station where it is blacked and where the gate is cut at the bottom. The upright runner is formed in a pocket in the flask extending from top to bottom and provided for the purpose. The cheek then is lowered on to the drying platform where it is dried over an open flame. Four rows of these individual burners are provided with five in each row thus accommodating 20 cheeks. The usual drying time is between 2 and 3 hours.

Eventually the cheek is taken to the casting station where it is lowered over the core already in position on one of the bases. The dowel pins guide it accurately into place and insure a uniform thickness of metal in the walls of the casting. The stripping plate remains in position on the bottom of the cheek until after the casting is poured. It rests on the rim of the base surrounding the core barrel and on the base supporting the entire mold and thus forms an iron to iron contact that prevents the hot metal from running out at the bottom. The molds are poured without copes.

Low-phosphorous malleable hot metal is brought from blast furnaces in a 45-ton ladle and is poured into 12-ton bottom foundry ladles which in turn are taken by the crane to the casting station. The ladle man stands on a raised platform as shown in Fig. 2 and manipulates the ladle in the same manner as the ladle is handled in the open hearth or bessemer department when pouring into the molds.

A 25-ton crane is available for handling loads in the green sand bay where the stools and miscellaneous castings are made. A second 25-ton crane is provided in the bay where the flasks, patterns, coreboxes, bases and core barrels are stored when not in use. The various bays are connected by industrial railroad and transfer cars from one bay to another.

Shower baths and lockers are provided for the employes in a brick building located on the river side of the main building. A second brick structure houses the office at the shipping end of the main building.

William Robert, general superintendent of the corporation, has appointed E. L. Raysor superintendent of the new plant. George L. Morrow, district sales agent, has charge of orders and shipments, and Thomas Bernhardt, assistant purchasing agent, has charge of all local purchases.

FIG. 7—CORE BAR WITH A SAND FLANGE TO GIVE THE MOLD A SAND BOTTOM BEING SET ON THE RAMMING BASE

Review of New Books

Chimneys as Economy

Draft and Capacity of Chimneys, by J. G. Mingle, cloth, 5 x 8 inches, 339 pages, published by Combustion Publishing Co., New York, and available from IRON TRADE REVIEW for $3.50 net, and in Europe by Penton Publishing Co., Ltd., Caxton House, London, at 17s 6d, net.

The prices of this volume were incorrectly given as $3 net and 15 shillings net respectively in connection with the review published on page 933 of the April 8 issue of IRON TRADE REVIEW.

* * *

Guide to England's Chemistry

Chemical Engineering and Chemical Catalogue, by Leonard Hill, cloth, 354 pages, 7 x 9½ inches, published by Leonard Hill, London and supplied by IRON TRADE REVIEW for $3 postpaid and in Europe by Penton Publishing Co. Ltd., Caxton house, London, for 15 shillings, net.

The second issue of this catalog, the current volume has been improved over its predecessor by including a number of features suggested in the interim. The catalog covers more than 60 classes of industry and is arranged in a way to give the most in formation possible with a minimum of effort and search. Its purpose is to assist in finding the most suitable product or plant for specific purposes.

A forword by Sir Robert Hadfield introduces the directory and an article on corrosion by the same writer is of much interest from the standpoint of chemistry. A department of tabular matter furnishes data of value.

* * *

Metallurgy and Science

Metallurgy, Its Influence on Modern Progress, by Sir Robert A. Hadfield, cloth, 388 pages, 6 x 9½ inches, published by D. Van Nostrand Co., New York, and supplied by IRON TRADE REVIEW for $7.50, postpaid, and in Europe by Penton Publishing Co. Ltd., Caxton house, London, for 25 shillings, net.

This is more than a text on metallurgy and portions read like a best seller. The introductory chapter outlines the basis of modern science and the discoveries of the forward-reaching minds of the past who adventured beyond the then known, often into discoveries they could not understand or utilize. The rise of steam as a universal motive power is given full credit for its place in making possible developments of the metallurgical world, by supplying such power as muscles alone never could furnish.

The importance of alloy steels, as a new chapter in the history of iron and steel, occupies a large place in the volume, as one with which the author has had intimate contact and one which promises greatest growth in the future by broadening the use of steels.

Viewing education and research as highly important to future development of the industry he devotes a considerable portion of the book to discussion of methods and facilities now available for this purpose. The lamp of faith burns brightly for this writer and he prophesies great things for the future of science.

* * *

Waste and Prevention

Corrosion, Causes and Prevention, by Frank N. Speller, cloth, 621 pages, 6 x 9 inches, published by McGraw-Hill Book Co. Inc., New York, and supplied by IRON TRADE REVIEW at $6, postpaid and in Europe by Penton Publishing Co. Ltd., Caxton house, London, at 30 shillings net.

While the volume has been written with particular reference to corrosion of the ferrous metals it also touches on the nonferrous. The tremendous waste of metal by the action of the elements has come to be regarded as a problem worthy the best efforts of the best metallurgical minds, as a matter of conservation of resources, by eliminating much of the replacement necessitated by oxidation.

This work is a reference book for those interested in any of the many phases of the corrosion problem and a handbook for the engineer and architect who may desire practical knowledge of developments in corrosion prevention. It is a complete summary of available information on corrosion.

In studying this problem a large literature has been produced, much of which is scattered and difficult of access. To bring this together is one object of this work.

Trade Mark Facts Made Interesting

Trade-Mark Profits and Protection, cloth, 258 pages, 5½ x 9 inches, published by D. Van Nostrand, New York, and supplied by IRON TRADE REVIEW, Cleveland, for $4.00 net.

This is a book that will entertain as well as instruct the reader. Legal principles are demonstrated by means of anectodes—little romances of the business world, based on fact, that are interesting, and shed light on trade marks, their origin, values and purposes. The growing practice to use trade marks on iron and steel materials and products makes the book of special interest to those adopting or contemplating the adoption of trade marks. Harry A. Toulmin, Jr., the author, is a well known lawyer and writer on business subjects, and it has been his purpose to get the legal information required into his book, by means of example and then to summarize the rule; thus we have the actual story of trade marks, with a knowledge of the law pertaining to them. The book is divided in four chapters: Trade Mark Conditions; Selecting the Trade Mark; Other Forms of Protection Confused with Trade Marks; and, Trade Marks as Foreign Salesmen. Numerous forms for trade mark records, and the like, are contained in an appendices. The book is well illustrated with typical trade marks.

Should Follow Products To Consumer

(*Concluded from Page* 1494)

steel industry will co-operate with it in the execution of a constructive educational campaign to arouse such a consciousness of steel and so protect the steel industry as a whole from the encroachment of products aggressively marketed by competing industries. It is a logical step fraught with possibilities the realization of which would lead directly to substantial increases in the tonnage output of both divisions of the industry.

While it is true that the mills which produce the steel may never come in contact with the purchaser, yet if the purchaser, in sufficient numbers, turns to competitive products—as in too many cases he now does—many of the mill furnaces will grow cold, their dividends will shrink, and the industry as a whole will suffer.

Whether or not the great producers of steel from the ore realize in the near or distant future what will happen to the demand for their product should boilers of substitute material supplant those of steel, or a competitive product continue to displace the use of structural steel, we who depend upon the fabrication of steel boilers or the fabrication of structural steel for a living must, if we would continue to exist and progress, take the steps necessary to prevent encroachment by competitive products, to extend the field of usefulness of our product, and to arouse a public consciousness of the service steel will render.

Editorials

Are Steelmakers Shirking Duty?

NO SUBJECT is more important to executives in the iron, steel and metalworking industries than that of merchandising. The most recent discussion of this absorbing subject was presented by Charles F. Abbott at the meeting of the American Boiler Manufacturers association.

His address, which appears elsewhere in this issue, undoubtedly was based on a desire to give the boiler manufacturers the benefit of his experience with the American Institute of Steel Construction in developing a national "consciousness" for steel. While he succeeded in this mission, he went even further in diagnosing some of the present ills of the entire steel industry.

He points to the fact that steelmakers have failed to maintain an interest in their product beyond the point where it is delivered to the fabricators. While they have been concentrating on production problems, manufacturers of competing materials have been developing their markets, or in other words, following their products through to the consumer. The result has been that the burden of merchandising steel has fallen on the shoulders of the "cold steel" industry or fabricating group.

In avoiding its share of the distribution burden, the "hot steel" industry undoubtedly has saved millions of dollars of direct expense, but has lost hundreds of millions of income which it might have received if it had developed its markets properly. How much longer will it be necessary for the "cold steel" industry to carry its present double burden before the producers of steel recognize the fact that distribution, while incurring great expense, also presents the opportunity for developing a greatly increased income?

Central West Feels Its Power

WHAT might broadly be described as the Central West again has tested its strength through the action by the house at Washington in passing an appropriation to dig and maintain a 9-foot channel in a section of the Illinois river deemed vital to the Lakes-to-gulf waterway. Once more this territory, tributary in an economic sense to Chicago, has given evidence of a growing regional consciousness. This region has long sought to shake off what is considered the political and economic dominance of the East. Whatever degree of dominance there has been has resulted, quite logically, from the deeper background of the East. The Central West seems to feel that by this time it has acquired a similar background.

In the Pittsburgh plus case the steel industry of this central western region became really articulate for the first time. It will be years before the full effects of the outcome of this case to consumers can be gaged. Certainly it gave great impetus to the movement for a regional consciousness. Agricultural interests have been encouraged to seek greater consideration.

The iron and steel industry of the Central West, meaning thereby Chicago, now stands pretty largely on its own bottom. Sentiment in that territory regards this as an anchor to its ambitions. Now the effort is to obtain an outlet to salt water, through the St. Lawrence in the North and the lakes-to-gulf waterway in the South.

Despite the defeat of the Haugen bill, some sort of farm relief legislation seems likely to be passed at this session of congress. Unless the farmers of the Central West get something at Washington, the solidification of that region will be greatly accelerated. Probably in no other section of the country is discontent with the administration at Washington so outspoken. Whatever may be the demerits of a regional consciousness, the Central West is becoming vocal and its strength politically and economically is asserting itself with increasing force.

Industrial Units Are Larger

ACCORDING to a study made recently by the National Industrial Conference board, the average size of the individual manufacturing plant is rapidly increasing. In the past the chief consolidations in industry have been in the production of raw materials. Now the tendency is toward the development of larger and larger fabricating corporations. In 1904 only 73 per cent of all manufactures was produced by corporations. In 1909 this percentage had moved up to 79; in 1914 it was 84; in 1919 it was 87, and estimates now place the figure at 90 per cent.

The apparent movement toward bigness in manufacturing and distributing lines may be slower than it was in the production of raw materials, but it is a sure movement nevertheless. The intensive application of science to industry requires large capital which is difficult to obtain except under corporate organization. The wide

scattered shareholders of such organizations, themselves consumers, reap a twofold benefit from efficient mass production through a share in the earnings and lower priced commodities.

Statistics on Metals Complete

PROBABLY the most complete set of statistics on metals ever issued in this or any other country is the sixth annual issue of the year book of the American Bureau of Metal Statistics, just published. The American bureau is a statistical organization of producers of copper, zinc and lead in this country, of which W. R. Ingalls is director. Mr. Ingalls knows these three branches of the metal industry from the inside as a mining engineer, and knows how to present statistics through his long experience as editor of *Engineering and Mining Journal.*

On the three metals named the statistics in the book are largely the original work of the bureau, with a number of government reports. All of the other metals are included, with the figures on iron and steel mostly from IRON TRADE REVIEW. Comparisons of the consumption of metals over a period of years in all the principal outlets of industry are among the valuable features, and on copper, zinc and lead these figures represent an enormous amount of work by the bureau. This organization was the first to compile comprehensive figures along these lines. Consumption of the three metals per person in various countries is given. The year book shows what can be done to give industry the statistical information it needs.

Why Union Membership Is Decreasing

ARE labor organizations becoming more intelligent? This is a question which manufacturers and workers are asking today. Despite the anthracite strike last year, industry as a whole throughout the country was less affected by strikes in 1925 than in any year since the war, and along with this condition labor wages were high and labor scarcity for manufacturers was low.

The less criticism has been heard. The question is whether this has been due to elimination of causes for criticism or whether the labor leaders have lost much of their authority due to the failure of one strike after another, and partly to the arousing of public opinion.

In 1920 there were 135 active unions in the metal and machinery trades. In 1925 the number was 83. In 1920 the membership of the metal and machinery trades unions was 34,404 whereas in 1925 this had dropped to 7690. Apparently in this group of trades, "labor leaders" are losing their hold on the workers. Every labor disturbance is leading the workers to think quietly for themselves; as long as conditions favor the independent worker, as they do today, union membership and tribute will decrease.

What Our Readers Are Thinking

Bowron Comments on Steel Earnings

To The Editor:

I NOTE IRON TRADE REVIEW'S article and tabular statement with reference to the return on capital invested in the steel industry. This statement is compact, handy and in very convenient shape. One might wish, of course, that the facts so ably pointed out in the article might deter to some extent the construction of additions to steel capacity. I doubt, however, whether this wish is more than Utopian.

Each manufacturer who feels that he can save 25 cents per ton on his production cost by adopting a new piece of machinery will undoubtedly install it, and in the majority of cases the process of cheapening involves an increase in productive capacity. It means perhaps a larger furnace, or a higher-speed mill, or more intensive combustion, etc.

It is very much like the international competition in armaments. It is in fact, without any bitterness involved, an industrial warfare, and one might as well ask the leading industrial plants to stop their improvements as to ask France and Russia and Poland to disband their armies and let the men go to work at producing food and clothing.

Is not our antitrust law to blame to some extent for this? If we were to call a conference for the purpose of reduction of industrial armaments, the participants in such conference would be speedily thrown into a federal penitentiary for breach of the law in conspiracy to reduce production.

It seems somewhat anomalous for a country which boasts of the equality of its citizens that when cotton is selling at an unremunerative figure, conferences may be held in any southern city for the purpose of pledging the producers to reduce their acreage, and these may be advertised publicly and freely and attended by governors, senators, congressmen, judges and other dignitaries. But the object of the meeting is considered laudable. In point of fact, it *is* laudable.

It is far better to diversify crops and produce each man sufficient food for himself and family and cotton for a surplus or money crop than to risk his whole prosperity upon one crop. As a matter of equity, therefore, and common sense, if it is right to avoid the stagnation of an immense amount of capital and energy in cotton production, why would it not be equally just and appropriate and statesmanlike to apply the same methods to the production of iron and steel?

Such discrimination as now exists in the application of the law reminds us of the words of Shakespeare:

"That in the Captain's but a choleric word . . . . in the soldier is flat blasphemy."

JAMES BOWRON, *Chairman,*
Gulf States Steel Co.

Birmingham, Ala., June 3.

The Reader's Page

Vol. LXXVIII, No. 23 IRON TRADE REVIEW June 10, 1926

Steel Industry "Called on the Carpet" Again

AT VARIOUS times in recent months the steel industry has been "called on the carpet" in public addresses, and has been told that its merchandising methods are crude and antiquated. By whom? This is the most remarkable feature of it—by men in the steel industry, some of them directing a large share of its activities. The criticism has been aimed at the industry in general, but principally at manufacturers and fabricators of steel. Now comes Charles F. Abbott, executive director, American Institute of Steel Construction, and points out "The hot steel industry (meaning the manufacturers) is the only important industry existing in which there is not universal recognition of the fact that the producer should maintain an active interest in his product until it reaches the consumer." Criticism offered in a helpful, sincere spirit. See page 1492.

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IRON TRADE REVIEW is published every Thursday by the Penton Publishing Co., Cleveland, O. Member, Audit Bureau of Circulation; Associated Business Papers, Inc.; and National Publishers Association.

Charles J. Stark .....Editor
Earl L. Shaner .....Managing Editor
John D. Pease .....Advertising Director
Francis F. Light .....Circulation Manager

Branch offices: 1037 Old South Bldg., Boston; 1147 People's Gas Bldg., Chicago; 408 Edwards Bldg., Cincinnati; 2203-2206 No. 220 Broadway, New York; 2148-49 Oliver Bldg., Pittsburgh; 24 California street, San Francisco; 401 Westory Bldg., Washington. Foreign offices: Prince's Chambers, Birmingham, Eng.; 2-3 Caxton House, Westminster S. W. 1, London; 23 Rue de la Bienfaisance, Paris, France; Kurfurstendamm 136, Berlin-Halsensee, Berlin, Germany.

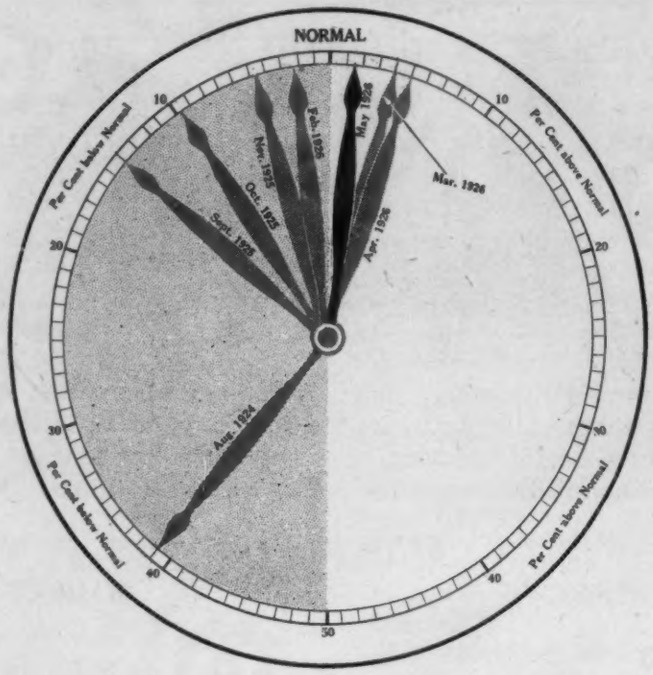
Cable address: *PENTON*, Cleveland; *IROTRAPEN*, London.

Terms: Subscription in United States, Cuba and Mexico, $6 per year; in Canada, $8.50 per year and in Great Britain and other countries, £2:0:0 per year. *Entered at the Postoffice at Cleveland as Second Class Matter.* *Copyright 1926 by the Penton Publishing Co.*

The Business Trend

Blast Furnace

The Dial represents the Blast Furnace Index of Business which is based upon a 40-year record of furnace activity. It is a barometer of general trade.



Business Dial

When 60 per cent of all the country's furnaces are in blast business conditions are normal. The Index is now higher than the normal point on the dial.

Furnace Activities Decline Slightly

By JOHN W. HILL, Financial Editor

DURING May there was a decline of eight in the number of blast furnaces in operation. At the close of the month 229 furnaces were making iron compared with 237 one month before and 235 two months before. Since the total number of units in the country is 376, the percentage of activity at the close of May was 60.9 per cent, compared with a theoretical normal of 60 per cent.

THIS means that the Blast Furnace Business Dial is 1.5 per cent above normal. At the close of April it was 5 per cent above normal. In May, 1925, the Dial was 20 per cent below normal and two years ago at this time it was 24 per cent under the normal line. In 1924, it will be recalled the summer brought a sharp downward movement in general business activities.

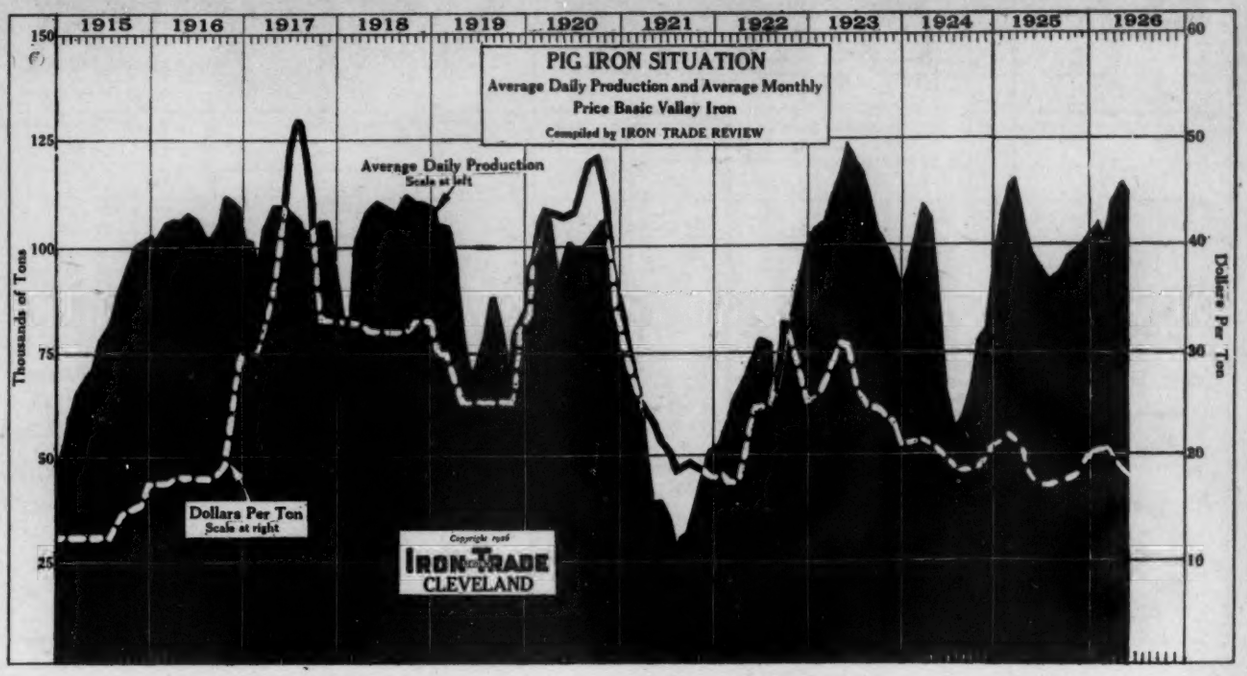
THE most striking part of the showing is that, measured by blast furnace activities, general industry is maintaining a pace well above that both of one year ago and two years ago. In all three years industry reached high levels early in the year. In each of them some slackening set in before the end of the first half had come.

THIS year the slowing down process has been extremely mild to date. The blast furnace index has dropped about 2 points from the top in April. In 1925 the percentage of furnaces in blast at the close of May was 14.8 points lower than the peak of that year. In May, 1924, the percentage had fallen nearly 20 points from the preceding top.

RECOGNITION of facts such as these has had a stimulating effect upon business and financial sentiment. In March the long overdue collapse of an extravagantly inflated stock market cast a shadow over business confidence. But industry had indulged in no such dizzy pole vaulting of prices. Moreover money was, and is, amazingly easy and business is not threatened by a wave of drastic liquidation.

COMMODITY prices have been falling for some months. It is significant that now there are signs of a slackening in the pace of the price recession. As shown by the graphic curve of Bradstreet's Index the level of commodity values dropped less than 1 per cent in May. They are about 6 per cent under the level of one year ago, and 12 per cent below the top level of 1925.

The Business Trend

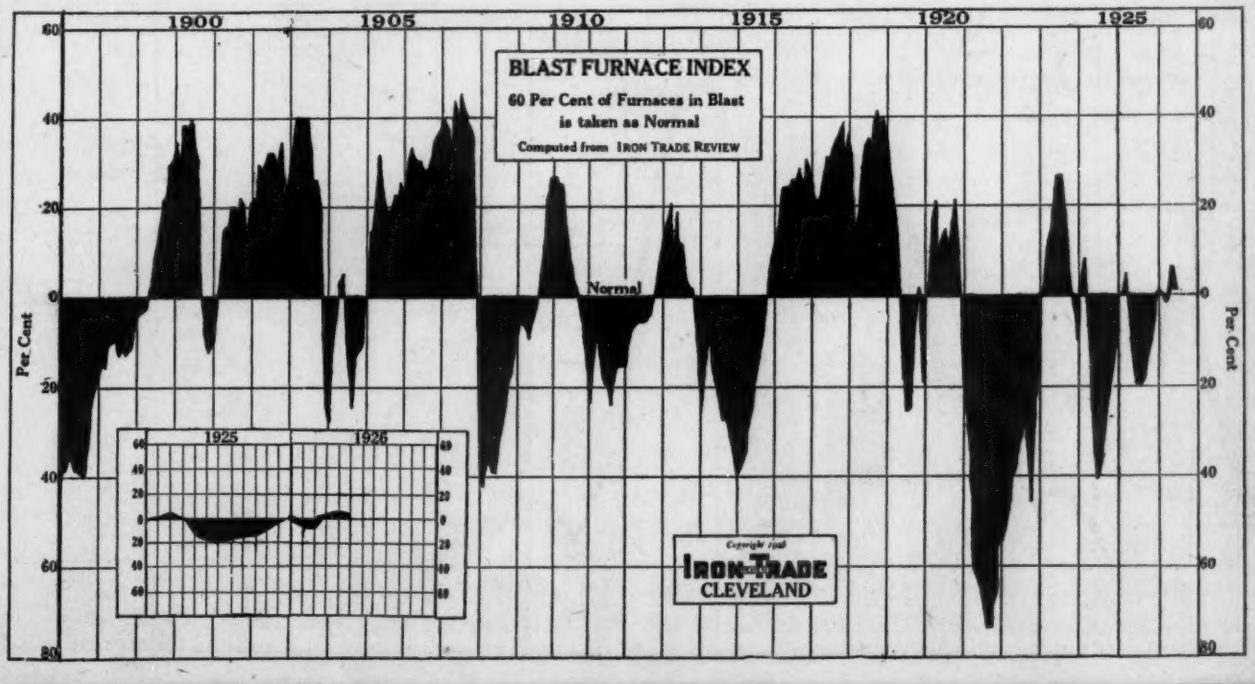

PIG IRON SITUATION
Average Daily Production and Average Monthly Price Basic Valley Iron
Compiled by IRON TRADE REVIEW
Average Daily Production Scale at left
Dollars Per Ton Scale at right
Thousands of Tons
Dollars Per Ton
1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926
IRON TRADE CLEVELAND

Pig Iron Situation

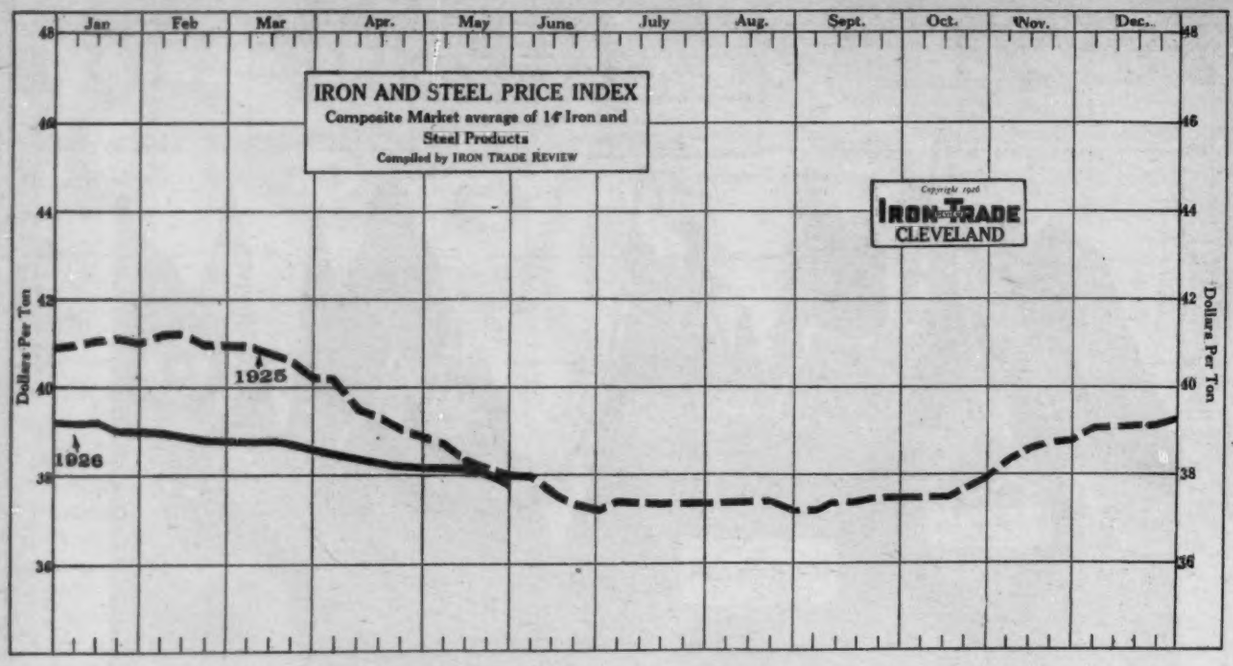
THE daily average production of pig iron in May at 112,262 tons was at the highest level for any May in the history of the industry, with the single exception of 1923. The month's record showed a small decline of 2.06 per cent compared with April. But it showed a gain of almost 20 per cent over May, 1925. The average daily output for the month represented an annual production rate of 41,000,000 tons compared with the rate of 41,900,000 tons indicated by the April output. During the month prices of pig iron declined.

Blast Furnace Index

OF THE total list of 376 blast furnaces in the country 229 were in blast at the close of May. This was 60.9 per cent of the total against 63 per cent one month before and 48.5 per cent one year ago. The theoretical normal point is 60 per cent. The blast furnace index therefore is 1.5 per cent above normal against 5 per cent above normal in the preceding month. In May the index had fallen only 2 points from the April peak. In May, 1925 the index had fallen 14.8 points from the peak of that year.


BLAST FURNACE INDEX
60 Per Cent of Furnaces in Blast is taken as Normal
Computed from IRON TRADE REVIEW
Normal
Per Cent
1900 1905 1910 1915 1920 1925
1925 1926
IRON TRADE CLEVELAND

The Business Trend

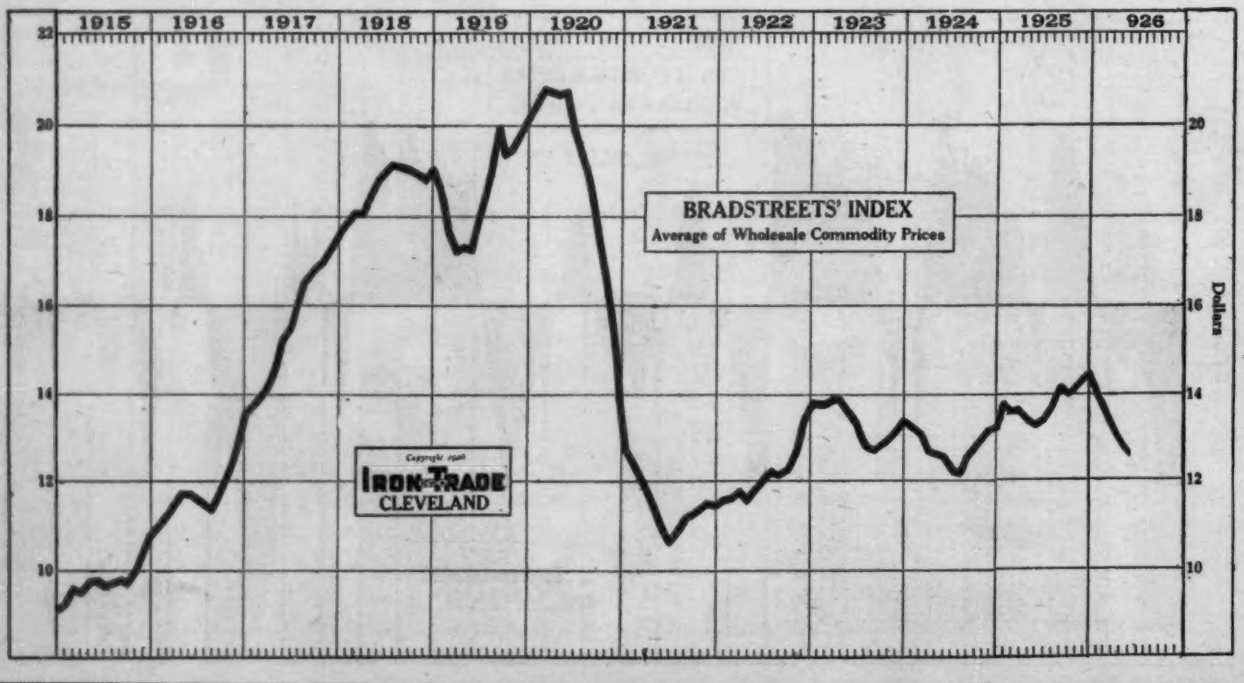


Steel Price Index

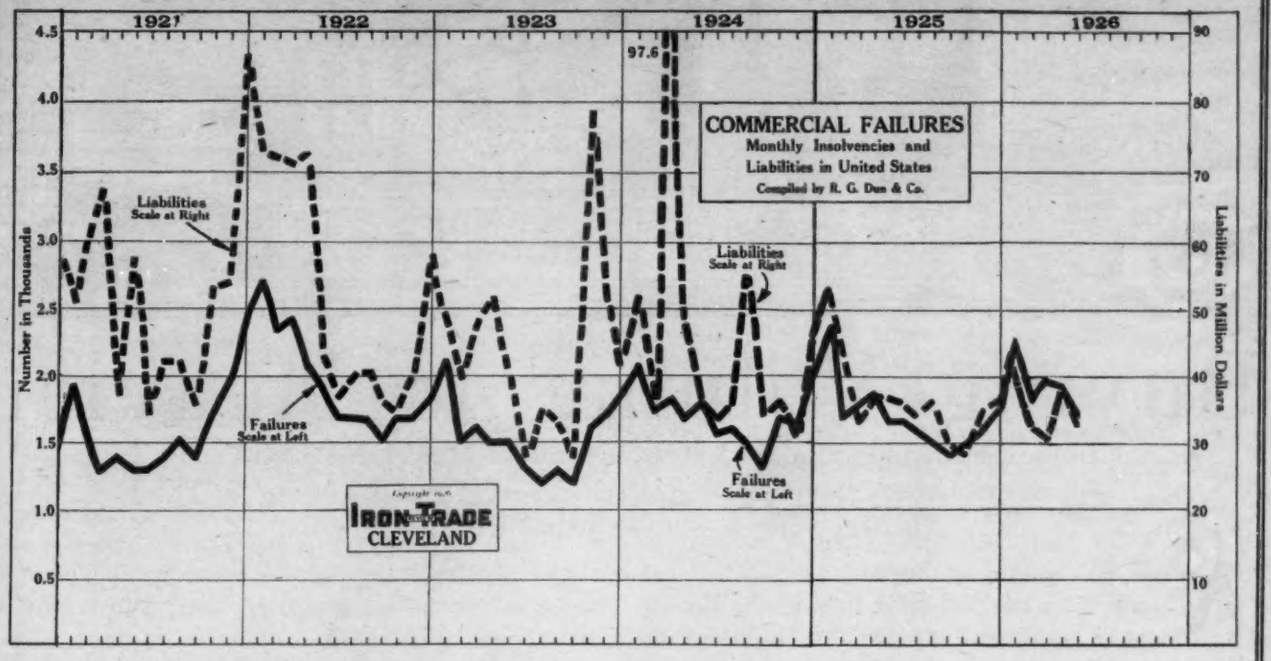
THE recent advance of bar prices has found no reflection in the picture of iron and steel prices as a whole. IRON TRADE REVIEW composite of 14 leading iron and steel products had declined to $37.84 in the week ended June 5. This represents the tenth consecutive week of recession and brings the level of all steel prices back to the basis of last October. One year ago the price average was $37.60 a ton. Prices of iron and steel are now about 40 per cent over their 1913 level.

Bradstreet's Index

THE trend of general commodity prices as reflected in Bradstreet's Index for June 1 continues downward. The decline, however, is noticeably less rapid than it has been in recent months, amounting during May to less than 1 per cent. The index is now about 6 per cent under the level of wholesale commodities one year ago. It is about 12 per cent under the peak figure reached in 1925. The sharpest recession has occurred for breadstuffs show a decline of 13 per cent in 12 months.



The Business Trend

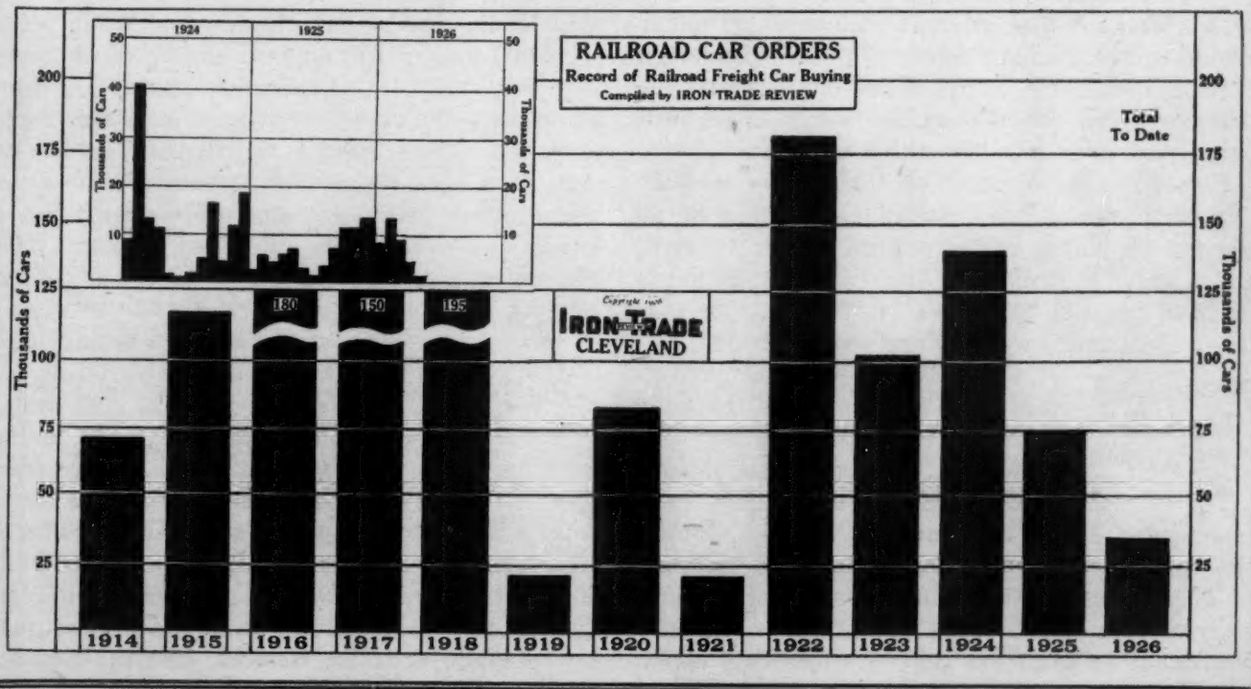


Commercial Failures

EVIDENCE of a lack of liquidation in business such as has taken place in the stock market this spring is shown in the record of commercial failures for May. The number reported for the month by R. G. Dun & Co., was 1730. The total indebtedness involved was $33,543,318. In April there were 1957 failures with an indebtedness of $38,487,321. In May of last year 1767 failures were reported with liabilities of $37,026,000. Liabilities in May were the smallest reported for any single month since last October.

Railroad Car Orders

PURCHASES of new equipment by railroads have continued to decline and during May they were the smallest for any month this year. The total number of car awards for the month as computed by IRON TRADE REVIEW was 448. This compared with 4615 in April and with 6985 in May, 1925. The May figure was the smallest for any month since June, 1924. During the first five months of the year the number of car orders was 35,783 compared with 23,980 in the same period of 1925.



Buying Volume Is Heavier

Recent Improvement in Sentiment Expresses Itself in More Liberal Placing of Tonnage —Railroad Orders Revive—Scrap Recovers—Pig Iron Covering for Third Quarter Spreads—Steel Output Recedes Slowly

A WIDER spread of buying activity in iron and steel has followed this week, the recent manifestation in the industry of greater reassurance in the stability of present conditions. Consumers facing the clearer prospect that modifications of future demands are not likely to be abrupt or severe and tempted by prevailing prices, are proceeding more freely to cover their expected requirements for the third quarter. Expiring second quarter contracts are being specified more heavily. The indications are that underlying consumption has been holding up better than the recent vagaries of steel buying signified.

General mill and steelworks operations again have declined slightly this week but hold closely to 80 per cent.

So far as representing a general market basis, the advanced price of 2.00c, Pittsburgh and 2.10c, Chicago on steel bars still is a matter for further determination. For current delivery or under second quarter commitments, 1.90c, Pittsburgh remains obtainable. It is believed a considerable tonnage taken recently at the lower figure will be carried over into the third quarter.

Chicago mills because of their superior position on bookings have posted an advance of $2 per ton on plates and structural shapes to 2.10c and 2.20c. At this level they are still 80 cents to $2.80 per ton below the Pittsburgh price plus the freight and therefore are well protected.

Ingot Fall Small

May's recession in steel production was in step with the mild decline in operations dating back to March. In production of steel ingots, the loss on a daily basis represented 4.3 per cent from April which brought the rate to the lowest point since last October. In May, however, the country continued to make steel at the high speed of 47,190,000 tons annually, equivalent to 84.27 per cent of theoretical capacity. Furthermore, May's output was 14.2 per cent ahead of the same month in 1925, the year of greatest production and was the largest May in history excepting 1923.

Steel ingot production for the five months of 1926 ending with May totaled 20,509,884 tons, a gain over the corresponding period in 1925 of 1,331,264 tons or 6.9 per cent.

Roads Are Buying

Railroad buying has moved forward this week with the best collective showing since March. Car orders which have been strikingly absent recently, totaled about 3300 including 1000 for the Baltimore & Ohio and 1000 for the Central of New Jersey. The Western Maryland will rebuild 1800 in its own shops. Locomotive buying has continued strong with 120 placed this week including 50 for Illinois Central, 60 for Pennsylvania and some scattering. The Norfolk & Western is out for 55,000 tons of rails.

Following the recent purchase at lower prices of 10,000 tons of full finished sheets by Chevrolet and 1000 tons by the Dodge companies, other automobile builders have come out for round tonnages. Their efforts to further break the price have been resisted by the mills. The weakness of other grades remains pronounced. Where attractive extras were involved, under 3.00c Pittsburgh has been done on black sheets. Some valley mills have absorbed freight to Chicago.

Pig Iron Revives

The recent further shaking down of pig iron prices by large consumers to a basis of $18, valley, has made the present market more attractive to a spreading group of buyers and this week has seen a liberal amount of third quarter engagements. Sales of the week were in excess of 100,000 tons of which 50,000 tons was taken by Cleveland interests. Among the larger users which have been placing tonnage are the General Electric Co., the American Radiator Co. for western and southern

plants, and the American Brake Shoe & Foundry Co. The Standard Sanitary Mfg. Co. which recently bought 25,000 tons is closing 10,000 to 15,000 tons additional for Louisville. Southern iron for third quarter is down $1 to $21.

Scrap gives renewed evidence of having scraped bottom after a long and persistent decline. Better buying both by consumers and dealers has appeared in several territories and prices there have recovered 25 to 50 cents per ton.

Another dip of 16 cents is recorded this week in IRON TRADE REVIEW composite of fourteen leading iron and steel products. The new figure is $37.68, the lowest in eight months.

Prices, Present and Past

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	June 9, 1926	May, 1926	Mar., 1926	June, 1925
PIG IRON				
Bessemer, valley, del., Pittsburgh	$20.76	21.01	22.76	20.76
Basic, valley	18.00	18.25	20.00	18.15
Basic, eastern del., eastern Pa.	21.75	21.75	22.20	21.50
*No. 2 foundry, del., Pittsburgh	19.76	20.76	22.26	20.11
No. 2 foundry, Chicago	21.50	21.65	23.50	20.25
*Southern, No. 2, Birmingham	21.00	22.00	22.00	19.00
*Southern Ohio, No. 2 Ironton	19.50	20.00	21.00	18.75
**No. 2X, Virginia furnace	23.00	23.00	23.25	23.00
**No. 2X, eastern del. Phila	22.76	23.01	23.26	21.51
Malleable, valley	18.00	19.00	20.50	18.50
Malleable, Chicago	21.50	21.65	23.00	20.25
Lake Superior charcoal, Chicago	29.04	29.04	29.04	29.04
Gray forge, val., del., Pittsburgh	19.26	20.26	21.76	19.61
Ferromanganese, del., Pittsburgh	92.79	92.79	102.29	119.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	2.75	2.85	3.15	2.80
Connellsville, foundry, ovens	3.75	3.85	4.45	3.75
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	36.00	36.00	36.00	35.00
Sheet bars, open-hearth, Pittsburgh	36.00	36.00	36.00	35.00
Billets, open-hearth, Pittsburgh	35.00	35.00	35.00	35.00
Wire rods, Pittsburgh	45.00	45.00	45.00	45.25
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.90	1.95	2.00	2.00
Steel bars, Chicago	2.10	2.10	2.10	2.10
Steel bars, Philadelphia	2.22	2.27	2.22	2.32
Iron bars, Philadelphia	2.22	2.22	2.22	2.22
Iron bars, Chicago, mill	2.00	2.00	2.00	2.05
Beams, Pittsburgh	1.90	1.90	1.90	2.00
Beams, Philadelphia	2.22	2.22	2.22	2.22
Beams, Chicago	2.10	2.10	2.10	2.20
Tank plates, Pittsburgh	1.90	1.90	1.85	1.95
Tank plates, Philadelphia	2.22	2.22	2.17	2.22
Tank plates, Chicago	2.10	2.10	2.10	2.20
Sheets, black, No. 28, Pittsburgh	3.10	3.20	3.25	3.15
Sheets, blue anl., No. 10, Pittsburgh	2.30	2.45	2.50	2.30
Sheets, galvanized, No. 28, Pittsburgh	4.30	4.55	4.60	4.25
Sheets, black, No. 28, Chicago	3.35	3.40	3.50	3.40
Sheets, blue anl. No. 10, Chicago	2.55	2.65	2.65	2.50
Sheets, galvanized, No. 28, Chicago	4.55	4.65	4.75	4.50
Wire nails, Pittsburgh	2.65	2.65	2.65	2.70
Wire nails, Chicago	2.70	2.70	2.70	2.90
Tin plate per base box, Pittsburgh	$5.50	5.50	5.50	5.50
OLD MATERIAL				
Heavy melting steel, Pittsburgh	16.00	16.00	17.70	17.10
Heavy melting steel, eastern Pa.	15.00	15.25	16.20	15.65
Heavy melting steel, Chicago	12.50	12.25	14.00	15.90
No. 1 wrought, eastern Pa.	17.00	17.35	18.00	18.20
No. 1 wrought, Chicago	12.50	12.55	14.50	15.90
Rails for rolling, Chicago	15.00	14.95	16.50	18.15

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (June 9, 1926)	$37.68
Last week (June 2, 1926)	37.84
One month ago (May, 1926)	38.22
Three months ago (March, 1926)	38.88
One year ago (June, 1925)	37.60
Ten years ago (June, 1916)	39.63
Thirteen years ago (June, 1913)	26.78

Late News Flashes

Corporation Has Slight Loss

New York, June 8.—Operations of the United States Steel Corp. this week are at 85 per cent of ingot capacity. This is a decline of 2 per cent in the week and compares with a high point around 95 per cent.

Large Structural Mill Nears Completion

Pittsburgh, June 8.—The new 54-inch structural mill at the Homestead works of the Carnegie Steel Co., which has been completely rebuilt to roll wide flanged thin webbed beams, is expected to be turned over in July and to be placed on commercial production thereafter.

Chicago Furnaces Run Steadily

Chicago, June 8.—Illinois Steel Co. has had 11 of its 12 blast furnace stacks at Gary active since Dec. 26 and 9 of the 11 at South Chicago since Feb. 27. Never before have its operations been so steady. For the Chicago district as a whole, 29 out of 36 steel works stacks are in blast. Steel ingot operations average about 88 per cent.

Valley Operations Fairly Steady

Youngstown, O., June 8.—Sheet mill operations in the Mahoning valley are 76 per cent this week compared with 83 per cent a week ago. Steelworks activity is steady with 66 per cent of physical capacity engaged. Hot strip mills are operating at capacity and cold strip units about 60 per cent. Pipe mills are operating at 85 per cent, bar mills at 65 per cent and tin mills full.

Claim No French Pipe Dumping

Washington, June 8.—Investigation has been under way for some time by experts of the customs service, treasury department, relative to the alleged dumping on the American market of cast iron pipe from France. It is understood that the result of the investigation shows at least in one specific case that there has been no dumping and it is believed that an official statement to this effect will be made in the near future.

Japanese Buy American Tie Plates

New York, June 8.—United States Steel Products Co. has booked 65,000 tie plates for the South Manchurian railway through Suzuki & Co. and 46,000 tie plates for Chosen railway through Mitsui & Co. New inquiries from Japan include 8 miles of 91-pound high tee rails for Tokio municipality and 6½ miles of 91-pound high tee rails, 2½ miles of grooved rails and 3 miles of guard rails for Osaka municipality. About 1000 boxes of tin plate are pending, otherwise Japanese demand is quiet, especially for sheets.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Pittsburgh, open-hearth	$35.00
Pittsburgh, bessemer	35.00
Youngstown	35.00
Philadelphia	40.30
Chicago	35.00
Forging, Pittsburgh	40.00
Forging, Philadelphia	44.30 to 45.30

SHEET BARS

Pittsburgh	$36.00
Youngstown	36.00

SLABS

Pittsburgh	$35.00
Youngstown	35.00

WIRE RODS

Pittsburgh	$45.00
Cleveland	45.00
Chicago	46.00

Standard extras, $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp	1.90c
Universal skelp, Pittsburgh	1.90c
Sheared skelp, Pittsburgh	1.90c

Structural Shapes

Pittsburgh	1.90c to 2.00c
Philadelphia	2.12c to 2.32c
New York	2.14c to 2.34c
Chicago	2.10c to 2.20c
Cleveland	2.09c
Birmingham	2.05c to 2.15c

Steel Plates

Pittsburgh	1.90c
Philadelphia	2.22c
New York	2.24c
Chicago	2.10c to 2.20c
Cleveland	2.09c
Birmingham	2.00c to 2.10c

Iron and Steel Bars

Pittsburgh, soft steel	1.90c to 2.00c
Pittsburgh, cold finishing	2.05c to 2.15c
Pittsburgh, forging quality	2.05c to 2.15c
Philadelphia, soft steel	2.22c to 2.32c
New York, soft steel	2.24c to 2.34c
Chicago, soft steel	2.10c to 2.20c
Cleveland, soft steel	2.09c to 2.19c
Birmingham, soft steel	2.05c to 2.15c
San Francisco, soft steel	2.60c
Pittsburgh, refined iron	3.00c to 4.50c
Pittsburgh, reinforcing billet	2.00c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	1.90c to 2.00c
Mill rail steel	1.85c to 1.95c
Philadelphia, common iron	2.17c to 2.22c
New York, common iron	2.19c to 2.24c
Chicago, common iron	2.00c

Hoops, Bands, Strips

Hoops, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh over 6 in.	2.30c
Hot rolled strip steel, Pittsburgh stamping quality	2.30c
Hot rolled strip steel, Chicago	2.50c to 2.60c
Bands, Chicago, under 6 inches	2.60c
Bands, Chicago, 6 in. and over	2.50c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh	3.70c to 3.75c
Worcester, Mass	4.05c
Chicago	4.20c

Cold Finished Steel

Cold finished steel bars, drawn, or rolled Pittsburgh, Chicago carloads	2.50c
Less carload	2.75c
Steel shafting turned and polished Pittsburgh, Chicago	2.60c

Screw stock base Cleveland $1 higher; and Worcester $3 higher than Pittsburgh and Chicago.

Hot Rolled Alloy Steel

Pittsburgh or Chicago

S. A. E. Series—

2300 (3½ per cent nickel)	4.40c to 4.50c
3100 (Nickel chromium)	3.40c to 3.50c
6100 (Chrome vanadium)	4.25c to 4.30c
6100 (Chrome vanad. spring)	5.85c
9250 (Silico-mang. spring)	3.25c

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relaying rails, Pittsburgh	23.00 to 25.00
Light rails, 25 to 45 mills	34.00 to 36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7-16-inch and smaller, Pitts	2.90c to 3.00c
Spikes, boat and barge, Pitts.	3.25c
Spikes, railroad, Chicago	2.90c to 3.00c
Track bolts, Pitts. standard	3.90c to 4.15c
Track bolts, Chicago	3.90c to 4.15c
Tie plates, Chicago	2.25c
Tie plates, Pittsburgh	2.25c to 2.35c

Wire Products

To Jobbers in Carloads

Dealers 5 cents per 100 pounds extra

F.o.b. Cleveland and Pittsburgh base	
Wire nails	2.65c
Galv'd nails smaller than 1-inch	4.90c
Galv'd nails, 1-inch and over	4.65c
Plain wire	2.50c
Annealed wire	2.65c
Galvanized wire No. 9 gage	3.10c
Barbed wire, painted	3.10c
Barbed wire, galvanized	3.35c
Polished staples	3.10c
Galvanized staples	3.35c

Coated nails, 100 pound kegs, subject to card of extras Feb. 1, 1926 over regular wire nail base.

Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts	$20.03

Joliet, DeKalb and Waukegan, Ill., and Anderson, Ind., prices $1 per ton over Cleveland-Pittsburgh base on products made there; Chicago $1 higher; Duluth $2 higher and Worcester, Mass., and Fairfield, Ala., $3 higher.

Sheets

SHEET MILL BLACK

No. 28, Pittsburgh, base	3.00c to 3.25c
No. 28, Philadelphia, delivered	3.42c to 3.57c
No. 28, Gary, Indiana Harbor	3.30c
No. 28, Chicago, delivered	3.35c

TIN MILL, BLACK

No. 28, Pittsburgh	3.10c to 3.25c
No. 28, Gary base	3.45c

GALVANIZED

No. 28, Pittsburgh, base	4.20c to 4.40c
No. 28, Philadelphia, delivered	4.62c to 4.72c
No. 28, Gary, Indiana Harbor	4.40c to 4.50c
No. 28, Chicago, delivered	4.50c to 4.55c

BLUE ANNEALED

No. 10, Pittsburgh, base	2.30c to 2.40c
No. 10, Philadelphia, delivered	2.67c to 2.72c
No. 10, Gary, Indiana Harbor	2.50c
No. 10, Chicago, delivered	2.55c

AUTOMOBILE SHEETS

No. 22, Pittsburgh, base	4.20c to 4.30c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base	$5.50

Gary, Ind., base 10 cents higher.

Long ternes, base	4.85

*This price is subject to quantity differentials established by individual regulations.

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O. to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less and $4 per ton higher. Chicago delivered 2½ points less and $5 per ton higher.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	68½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled, 3¼ to 3½-inch	46 off

Additional discounts of several 5 per cents being allowed.

Chain, Piling, Cut Nails

Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.25c to 2.30c
Cut nails, c. l., f.o.b. mills	2.80c

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago	$53.20 to 54.20
Six-inch to 24-inch, Chicago	49.20 to 50.20
Over 24-inch, Chicago	46.20
Four-inch, Birmingham	44.00 to 45.00
Six-inch and over, Birmingham	40.00 to 41.00
Four-inch, New York	56.50 to 57.60
Six-inch and over, New York	51.50 to 52.60

Standard fittings, Birmingham base $110.00, 6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $5 higher than Class B

Nuts and Bolts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Hot pressed square tapped or blank	$4.00 off list
Hot pressed hexagon tapped or blank	$4.40 off list
Cold punched square or hexagon blank	$4.10 off list
Cold punched square or hexagon tapped or blank	$4.10 off list

Cold punched U. S. S. semifinished hexagon nuts ⅝-inch and larger 75, 10 and 5 off

Cold punched U. S. S. semifinished hexagon nuts 9/16-inch and smaller 80, 10 and 5 off

Cold finished S. A. E. semifinished ⅝-inch and larger 75, 10, 10 and 5 off

Cold finished S. A. E. semifinished 9/16-inch and smaller 80, 10, 10 and 5 off

CARRIAGE BOLTS

(⅜ x 6-inch, smaller and shorter)

Rolled thread	50, 10 and 10 off
Cut thread (all sizes)	50 and 10 off
Eagle carriage bolts (Eagle list)	65 and 10 off

MACHINE BOLTS

(⅜ x 4-inch, hot pressed nuts)

Rolled thread	60 and 10 off
Cut thread (all sizes)	50, 10 and 10 off

(All sizes cold punched nuts)

Cut thread	45, 10 and 5 off
Lag screws	60, 10 and 10 off
Plow bolts Nos. 3 and 7 heads	50 and 10 off
All other standard heads	50 and 10 off plus 20 per cent
Tap bolts	30 off
Bolt ends with hot pressed nuts	50, 10 and 10 off
Bolt ends with cold punched nuts	45, 10 and 5 off
Blank bolts	50, 10 and 10 off
Rough stud bolts with nuts (250 pieces or more of a size)	40 and 10 off
Stove bolts, 80, 10 and 5 off plus 2½ in bulk.	
Tire bolts	60 and 5 off

SEMIFINISHED CASTELLATED AND SLOTTED NUTS

Per 1000, f.o.b. producer's plant, freight allowed

	S.A.E. Castellated	U.S.S. Slotted
¼	$ 4.40	$ 4.40
5/16	5.15	5.15
⅜	6.20	6.60
7/16	7.90	9.00
½	10.10	10.50
9/16	13.80	14.20
⅝	17.00	17.30
¾	28.50	24.00
⅞	36.00	36.00
1	55.50	58.00
1⅛	89.00	89.00
1¼	126.00	131.00
1⅜	183.50	183.50
1½	210.00	210.00

Larger sizes—Prices on application

HEXAGON CAP SCREWS

Milled	80 and 10 off
Upset	80, 10 and 10 off

SQUARE HEAD SET SCREWS

Milled	80 and 5 off
Upset	80, 10 and 5 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	2.50c to 2.60c
Structural rivets, carloads, Chicago	70, 10 and 5 to 70 and 10 off
**Rivets, 7/16-inch and smaller, Pittsburgh Cleveland	70 and 10 to 70 and 5 off
**Rivets, 7/16-inch and smaller Chicago	70 and 10 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.30 to 6.40 off
Wrought c.l., Pitts dist	6.50 to 6.55 off
Lock washers, f.o.b. factory	$5 off

Pig Iron

Buying Movement Develops in Some Districts Following Price Reductions—Inquiries Total Over 30,000 Tons

THE largest sales of pig iron since the buying movement for the second quarter developed during the past week, following the Standard Sanitary Mfg. Co.'s purchase of around 25,000 tons. The company now is inquiring for 10,000 to 15,000 tons additional for its Kentucky plant, the American Brake Shoe & Foundry Co. is in the market for 8000 tons for Pittsburgh and Cleveland. Furnace interests with headquarters at Cleveland booked more than 50,000 tons during the week; sales of 20,000 tons are reported from Eastern districts. Small buyers have been able to obtain $18, base valley, on foundry iron. Birmingham furnaces have reduced their price $1 to $21, base, for third quarter though holding for $24 for June.

PITTSBURGH, June 8.—A sanitary ware company's large purchase of foundry iron as reported last week, usually the signal for other consumers to follow suit has not had that result so far. The same interest now is negotiating 10,000 or 15,000 tons for southern Ohio or Alabama iron for its Kentucky plant. The concensus of trade opinion is that foundries generally have too much iron in stock or due them on contracts to warrant further generous commitments. Any such consumers are taking a firm stand against accumulating large stocks and will buy on a monthly basis throughout the next quarter. Small lots occasionally are sold by makers direct or through brokers, foundry or malleable bringing $18, valley, usually in a carload or two at time. The Diamond Foundry Co., Akron closed on a portion of 600 tons of No. 2X at $20, delivered from a Cleveland furnace, prior to the market decline. A canvass of the situation reveals no inquiries now pending above 100 tons in this territory. The National Malleable & Steel Castings Co. bought its June requirements of basic at $18, valley. Small lots of bessemer still are bringing $19 valley. One inquiry now is out for 300 tons of that grade.

Boston, June 8.—Sales of pig iron in New England for third quarter show moderate improvement. The product of two new furnaces is being offered in the district. The Troy, N. Y., furnace of the Hudson Valley Coke & Products Corp., although previously in blast was officially opened during the week. The Mystic Iron Works, Everett, Mass., is selling trial lots for future delivery at $21, at furnace. The Sullivan Machinery Co., Claremont, N. H., is in the market for 300 tons. Prices at Buffalo and eastern Pennsylvania have held stationary during the week. The Buffalo level is $20, and eastern Pennsylvania $21.25.

New York, June 8.—Pig iron sales in the past week in this territory exceed 10,000 tons, and inquiry is improving. The General Electric Co. is reported to have closed for about 7000 tons. The Thatcher Furnace Co. is inquiring for 1000 to 2000 tons; the Gould Coupler Co. wants 1500 tons, and the R. Hoe & Co., Worthington Pump & Machinery Corp. and others are obtaining prices on round tonnages. Domestic foundry iron is unchanged at $20, base, Buffalo, and $21.50, base, eastern Pennsylvania furnace. German foundry iron that has arrived or is enroute is $20.50 to $21, duty paid. No German future iron is being offered because of the treasury department's recent tariff ruling. Dutch foundry iron now is $21.25 to $21.50, base, duty paid. Indian iron is around $21. The new Mystic furnace, Everett, Mass., is soliciting business in New England for the first time.

Despite the English coal strike and restricted output of pig iron, a large tonnage of English low phosphorus iron is afloat en route to the United States, some of which is unsold.

Philadelphia, June 8.—Heavy sales of steelmaking grades again featured the pig iron market here in the past week. Additional tonnages now are under negotiation. Most of this business is for nearby shipment. Demand for foundry iron also is improving. Sales of this grade in the past week totaled 5000 to 10,000 tons. Numerous inquiries still are pending. The National Radiator Co. wants 2000 to 3000 tons for Trenton, N. J., and around 1500 tons for Johnstown, Pa. The Norfolk & Western railroad wants 1600 tons for third quarter.

Buffalo, June 8.—Some estimates of new inquiry for pig iron are as high as 20,000 tons, while others indicate the total is nearer 15,000 tons. Makers think the bulk of this inquiry will be covered this week as some consumers have indicated they want some shipments this month. The $20 base on foundry iron is being quoted freely on third quarter inquiry and so far has been firmly maintained. One Buffalo maker has announced a $19 price on basic iron. Buffalo production, now confined to 14 of 21 furnaces, may be cut to 13 before the end of the month. Shipments have improved since June 1.

Cleveland, June 8.—Low prices that developed in the pig iron market last week stimulated buying, and the week's sales by furnace companies with headquarters here bounded up to well over 50,000 tons. One merchant company sold more pig iron in the first five days of June than in all of May, and its May's tonnage was the best month's to date this year. Other large buyers have come into the market following a sanitary ware company's purchase of around 25,000 tons.

The local situation became more active than in many weeks. One local melter bought 1500 tons; a Berea foundry placed 2000 tons; a Barberton company bought 500 tons, from Cleveland furnaces. One of the Cleveland producers has been active in the outside districts, meeting other lake furnace and valley competition. The

(*Concluded on Page* 1527)

Pig Iron Prices

Prices per gross ton

Bessemer, valley	$19.00
Bessemer, Pittsburgh	20.76
Basic, valley	18.00
Basic, Pittsburgh	19.76
Basic, Buffalo	19.00
Basic, del., eastern Pa.	21.75 to 22.25
Malleable, valley	18.00
Malleable, Pittsburgh	19.76
Malleable, del., Cleveland	19.75
Malleable, Chicago	21.00 to 21.50
Malleable, Buffalo	20.00
Malleable, del., eastern Pa.	22.75 to 23.00
No. IX, Eastern del., Phila.	23.26
No. IX, Buffalo	21.50
No. 1 foundry, Chicago	21.50 to 22.00
No. 2 foundry, valley	18.00
No. 2 foundry, Pittsburgh	19.76
No. 2 foundry, Buffalo	20.00
No. 2 foundry, Chicago	21.00 to 21.50
No. 2 foundry, Granite City	22.00 to 22.50
No. 2 foundry, Ironton furnace	19.00 to 19.50
No. 2 foundry, del., Cleveland	19.75
No. 2 foundry, del., Phila.	22.26
No. 2 foundry, N. J., tidewater	23.39
No. 2X, eastern del., Phila.	22.76
No. 2X, east. N. J., tidewater	23.89
No. 2X, foundry, Buffalo furnace	20.50
No. 2X, eastern del., Boston	25.15 to 25.65
No. 2X, Buffalo, del., Boston	25.41 to 25.91
Continental foundry f.o.b. Boston	20.00 to 21.00
India, 2.25 to 2.75 silicon, delivered cars, Boston	21.00 to 22.00
No. 2 Alabama, Birmingham	21.00 to 22.00
No. 2 Alabama, Cincinnati	24.69 to 25.69
No. 2 Tenn., Birmingham	21.50
No. 2 Tenn., Cincinnati	24.69
No. 2 Alabama, Philadelphia	27.01 to 28.01
No. 2 Alabama, Chicago	27.01 to 28.01
No. 2 Alabama, Chicago (barge and rail)	26.18
No. 2 Alabama, Boston (rail and water)	27.91 to 28.91
No. 2 Alabama, Cleveland	27.01 to 28.01
No. 2 Alabama, St. Louis	24.52 to 26.42
No. 2X, Virginia, furnace	23.00 to 23.25
No. 2X, Virginia, Phila.	28.17 to 28.42
No. 2X, Virginia, Jersey City	28.54 to 28.79
No. 2X, Virginia, Boston	28.92 to 29.17
Gray forge, eastern Pa.	21.75 to 22.25
Gray forge, val. del. Pitts.	19.26
Low phos., standard, valley	27.50
Low phos., standard, Phila.	24.26
Low phos., Lebanon, furnace	23.00 to 24.00
*Low phos., English (nominal)	24.01 to 24.51
Charcoal, Birmingham	30.00
Charcoal, Superior, Chicago	29.04

Silvery iron Jackson county, Ohio furnace, 5 per cent $24.50; 6 per cent $25.50; 7 per cent $26.50; 8 per cent $27.50; 9 per cent $29.00; 10 per cent $31.00; 11 per cent $33.00; 12 per cent $35.00; 13 per cent $37.00; and 14 per cent $39.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $33.00; 11 per cent $35.00; 12 per cent $37.00; 13 per cent $39.00; 14 per cent $41.00; 15 per cent $44.00; 16 per cent $46.00; 17 per cent $48.50.

*Duty paid, delivered Philadelphia consumers.

Coke

Some Connellsville Furnace Coke Contracts Closed at $3—Foundry Purchases Also More

SOME blast furnace interests are closing for third quarter and last half, among recent contracts being that of the American Radiator Co., which closed at $3. One or two valley furnaces have been quoted $2.90 and $3 for third quarter. Spot prices of $2.70 and $2.75 are noted. Foundry contracting also has shown more activity, with $4.25 to $4.75 applying on standard fuel.

Pittsburgh, June 8.—Due to poor pig iron market conditions, blast furnace interests are resisting efforts of oven operators to obtain $3.25 on beehive coke contracts for third quarter or last half. Among recent contract arrangements is that of the American Radiator Co. which closed at $3. One or two valley furnaces have been quoted $2.90 and $3 on their third quarter requirements. Some furnace operators would rather pay a higher figure for a better grade of coke. Included in the list of possible early purchasers are the Struthers Furnace Co., Wheeling Steel Corp., and one or two eastern stacks. Spot market figures of $2.70 and $2.75 still are claiming attention. One or two small sales are noted at $2.85. Some coke producers are maintaining a $3 minimum, thus refraining from jeopardizing contracts closed or under negotiation. Some foundry contracting activity also is noted at $4.50 to brokers and $4.75 to consumers. Several other orders were taken at $4.25 and $4.50 for fair size tonnages. Smaller lots of cheaper grades have gone at $3.75 and $4. Prices lower than $3.75 usually apply to off-grade, machine drawn coke, not selected. Medium sulphur coke activity is scarce. The price is $2.50.

Production of coke in the Connellsville region for the week ended May 29 was 150,040 tons, compared with 155,450 tons the preceding week, according to the *Connellsville Courier*.

Cincinnati, June 8.—Orders for domestic coke are increasing, as dealers are beginning to lay in supplies for fall and winter. Specifications for by-product foundry fuel this month are exected to exceed last month's volume, which was the record for the year. The Indianapolis maker has announced a continuation of its May price of $10.75, ovens, for shipment this month. Consumption of by-product and beehive foundry coke has eased off slightly as a result of a machine molders' strike in this district. Furnace coke is dull. The Wise county grade is quoted $3.50 and the New River $5, ovens.

New York, June 8.—One beehive coke operation has set June 19 as the final date for contracting for second half. Additional contracts were closed in the past week at $5.25 and $5.50, ovens. Spot demand is quiet.

St. Louis, June 8.—Foundry coke demand for quick shipment continues fairly good, the reduced melt at mills and foundries having thus far failed to affect fuel sales. There is also a good volume of contracting for eight to ten months, both here and in the Southwest. Renewals are being made mainly on a basis of the same figures at which old contracts expired. Some decrease in shipments of industrial coke is reported.

Birmingham, Ala., June 7.—By-product foundry coke still is in good demand in Alabama, though inquiry is not as active as recently. Quotations still range up to $6.50 for spot foundry coke, though the average is between $5.50 and $6.

Coke Prices

Beehive, Ovens

Prices per net ton

Connellsville furnace	$2.70 to 3.00
Connellsville foundry	3.75 to 4.00
New River foundry	6.50 to 7.00
New River furnace	4.50 to 5.00
Wise county furnace	3.25 to 3.50
Wise county foundry	4.25 to 5.50
Alabama foundry	5.50 to 6.50
Alabama furnace	5.50

By-Product

Foundry, Newark, N. J.; del.	$ 9.59 to 10.75
Foundry, Chicago, ovens	9.75
Foundry, New England, del.	12.00
Foundry, St. Louis	10.00
Foundry, Granite City, Ill.	10.00
Foundry, Birmingham	5.50 to 6.50
Foundry, Indianapolis, del.	10.75
Foundry, Ashland, Ky.	8.00
Foundry, Portsmouth, O.	7.50

Ferroalloys

Market Steady—Additional Contracts for Spiegeleisen Closed

Pittsburgh, June 8.—Ferroalloy market conditions are unchanged. Consumers of spiegeleisen continue to contract for last half. Tonnages are on a par with their commitments for the first half. Some contracts will not be closed until later in the month Prices are unchanged and firm. Ferromanganese specifications are coming along fairly well, although here and there consumption appears to be slowing up. Users of 50 per cent ferrosilicon are taking out material against contracts, and occasional spot market buying takes place in the lower grades.

New York, June 8.—Spiegeleisen and ferromanganese sales were restricted during the past week to a number of spot carloads. Prices are steady.

Special ferroalloys are unchanged in prices, except that ferrotungsten now is lower at $1 to $1.05 a pound contained. Shipments are said to hold up well for this season of the year. Tungsten ore is dull but unchanged at $10 to $10.75 a short ton unit, duty paid.

Few Changes in Sheet and Tin Mill Scales

Additional facts to those previously published in IRON TRADE REVIEW, regarding the signing of the Amalgamated association wage scale covering sheet, tin and tin house operations for the new year beginning July 1, indicate that few changes have been made in last year's scale by the recent Atlantic City conference.

Official announcement shows the adoption and reaffirmation of last year's scale for sheet and jobbing mills. In the tin mill division, the pair heater and the screw boy are given an advance of 5 per cent. On loose rolling mills, the greaser is advanced in wages by 5 per cent. The new portions of the scale governing the three-part system include a 10 per cent wage increase to the mechanical doubler, and 5 per cent increase for the pair heater, screw boy and single boy on the three-part system. Last year's scale on tin house employes' wages has been accepted for this new scale year also.

The bar iron conference is being held this week at Atlantic City.

Awards Furnace Work

Approximately 800 tons of plates and shapes are involved in the new LaBelle blast furnace stack of the Wheeling Steel Corp., Steubenville, O., which will be erected under the supervision of Arthur G. McKee & Co., Cleveland. All plate and structural material included in the furnace, downcomers, dust catcher, gas washer, alterations to the present storage bin system etc., will be fabricated by the Pennsylvania Engineering Works, New Castle, Pa.

Ferroalloy Prices

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resales	$88.00 to 110.00
Ferromanganese delivered Pittsburgh	92.79 to 114.79
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	32.00 to 34.00
Ferrosilicon, 50 per cent freight allowed	85.00 to 87.50
Ferrotungsten standard, per pound contained	1.00 to 1.05
Ferrochrome, 60 to 70 chromium, 6 to 8 carbon, cents per pound contained, delivered	11.00 to 11.50
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	3.25 to 4.00
Ferro-carbon-titanium, car lots, producer's plant, net ton	200.00
Ferrophosphorus, electrolytic, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent material)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23 to 25 per cent, f.o.b. Anniston, Ala., (24 per cent materials)	122.50

†Duty paid.

Plates

Market Shows Some Improvement, and Price Is Firmer—Tank and Boat Demands Lead

PLATE prices show more firmness at 1.90c, Pittsburgh, and some good tonnages have come out. The leading interest at Chicago booked 5000 tons for oil tanks. Thirteen barges requiring 1500 tons were placed at Pittsburgh. About 2500 tons will be required for Illinois Central locomotives just awarded. About 8000 tons of steel, principally plates, are required for two cruisers.

PLATE PRICES, PAGE 1512

Pittsburgh, June 8—This week plate fabricators here received a definite inquiry from the upper Mississippi territory for three steamboats and 15 barges involving an estimated plate tonnage of 3500 tons. The contract for 13 barges, about 1500 tons, is understood to have gone to the Dravo Contracting Co. Numerous plate orders are coming in for 25 to 150 tons at a time for individual tanks and other finished forms. The plate price shows firmness at 1.90c. Contracts for third quarter will come up for attention within the next two or three weeks.

Boston, June 8.—Plates are firm in the New England market at 1.90c, Pittsburgh, or 2.265c delivered. Considerable bridge work is in sight. One bridge inquiry calls for 500 tons of plates.

New York, June 8.—It is estimated 4000 tons of steel, mainly plates, will be required for each of two navy cruisers, one of which has been placed with the Wm. Cramp & Sons Ship & Engine Building Co., and the other to be built at the New York navy yard.

Philadelphia, June 8.—The price of 1.90c, Pittsburgh, on plates is firm, and continues to reflect vitality in this market. Irregularities are infrequent. Mill operations average 50 per cent or higher.

Cleveland, June 8.—Larger tonnages are coming out and the market is improved and in better tone. Pittsburgh mills are expected to furnish the bulk of about 2500 tons of plates for Illinois Central locomotives awarded the Lima Locomotive Works. About 7500 tons, mostly plates, for three car ferries for the Wabash railroad again is pending. A good tonnage is in prospect for railroad and highway bridgework. The market is steady at 1.90c, Pittsburgh, or 2.09c, Cleveland; in fact, plate prices show more stability at present than they have exhibited in some months.

Chicago, June 8.—Oil storage tankage continues to fill the void resulting from the lack of car buying. The leading interest in the past few days has booked 5000 tons in tankage and the leading independent about 1500 tons. The latter interest has on its books specifications engaging its plate capacity for 60 days. It is believed that by the time the oil fields complete their tankage buying, western carriers will be placing cars. It appears that some plate tonnage at the second quarter price will extend into the third quarter, but makers say they are holding on all new business to the new levels of 2.10c, Chicago, for tonnage and 2.20c for small business.

CONTRACTS PLACED

800 tons, pipe line, La Mesa, Calif., to Los Angeles Mfg. Co.
700 tons, pipe line, Nevada irrigation district, Grass Valley, Calif., to Western Pipe & Steel Co.
200 tons, siphon for Nevada irrigation district, Grass Valley, Calif., to Western Pipe & Steel Co.
300 tons, pipe line, Roseville, Calif.; to Western Pipe & Steel Co.
1500 tons, 13 barges for Federal engineers, Memphis, Tenn., to the Dravo Contracting Co.
225 tons, blast furnace repairs for the Youngstown Sheet & Tube Co., Youngstown, O., to the Pittsburgh-Des Moines Steel Co.
100 tons, riveted pipe line for Washington, to the Pittsburgh-Des Moines Steel Co.

CONTRACTS PENDING

7500 tons, largely plates, for three car ferries for the Wabash railroad; bids being taken.
1450 tons, pipe line, La Mesa, Calif.; bids in June 21.
1400 tons, pipe line, Tacoma, Wash.; bids opened.
3000 tons, five ferry boats for Southern Pacific Equipment So., San Francisco; bids being received.
100 tons, pipe line, Roseville, Calif.; pending.
100 tons, pumping plant, East Bay Municipal utility district, Oakland, Calif.; Western Pipe & Steel Co. low bidder.
1500 tons, pipe line, Tacoma, Wash.; bids in this week.
3500 tons, 15 barges and three steamboats for the Upper Mississippi river territory; bids close early in July.

Semifinished

Market Is Quiet—Some Sales Made for Third Quarter at Current Prices

SALES of semifinished material continue on a small scale, mainly for prompt shipment. Some business has been booked for third quarter, and negotiations have been started looking to contract renewals. Prices do not show any deviation from $36 on sheet bars, and $35 on billets and slabs. Stripmakers have been buying some fair size lots of billets.

SEMIFINISHED STEEL PRICES, PAGE 1512

Pittsburgh, June 8.—Semifinished steel has not been active but from time to time consumers of billets or slabs buy a month's supply. A few such tonnages were closed up during the past few days in billets and slabs and the orders carried a $35 price. Stripmakers and others here report inability to obtain lower quotations. While no transactions are noted in sheet bars, $36 is the quotation. Several third quarter arrangements are due for renewal within the next few weeks but no change in quotations will be made. Specifications on second quarter contracts are practically up to date, such orders coming through so far this month having made up any deficiency that existed in May. Several billet and sheet bar customers have taken a little more than two-thirds of their quarterly commitments. Forging billet customers specify regularly against $40 arrangements and the same thing practically can be said of wire rod buyers, although some of these specifications are past due. Skelp is inactive except as regards some Canadian business, and the price of 1.90c is unchanged.

Philadelphia, June 8.—Several round lots of billets were sold in the past week at $35 to $36, Pittsburgh, for rerollers and $40 for forging quality. Good tonnages of sheet bars were sold at $36. Wire rod contracts are being well specified, with additional fair spot sales at $45.

Youngstown, O., June 8.—Opportunity was afforded recently to test out sheet bar prices on an inquiry for 2000 tons of attractive specifications. Mills quoting on the requirement named $36, Youngstown, or Pittsburgh in all cases. No new business for any semifinished commodity is under negotiation. Sheet bar specifications are released in small lots and reflect the disposition of consumers to match sheet orders firm in hand. Standard slabs and billets are quoted $35, Youngstown, and sheet bars and small billets at $36, Youngstown.

Cleveland, June 8.—Some sales of sheet bars have been made for third quarter at $36, valley, and billets and slabs for the same delivery at $35. The market is not very active. Renewals of sizable contracts for third quarter are up for negotiation. Specifications are fair.

Chicago, June 8.—Sales of sheet bars and small billets have been light the past week. Prices are unchanged at $35, base, for small billets and $36 for sheet bars.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross Tons Delivered to Consumer

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	13.00 to 14.00
Boston (dealers)	10.00 to 10.50
Buffalo, No. 1	15.50 to 15.77
Buffalo No. 2	14.50 to 14.75
Chicago	12.25 to 12.50
Cincinnati (dealers)	11.00 to 11.50
Cleveland, No. 1	13.50 to 14.00
Cleveland, No. 2	12.50 to 13.00
Detroit	12.00 to 12.50
Eastern Pennsylvania	15.00 to 15.50
Bethlehem delivery	14.50
New York (dealers)	9.75 to 10.25
Pittsburgh	16.00 to 16.50
St. Louis	12.00 to 12.50
Valleys, No. 1	16.00 to 16.25

COMPRESSED SHEETS

Buffalo	14.50 to 14.75
Chicago	10.25 to 10.75
Cleveland	13.00 to 13.50
Detroit	10.25 to 10.75
Pittsburgh	14.50 to 15.00
Valleys	14.50 to 15.00

BUNDLED SHEETS

Buffalo	10.50 to 11.00
Cincinnati (dealers)	7.00 to 7.50
Cleveland	11.00 to 11.50
Eastern Pennsylvania	13.00 to 13.50
Pittsburgh	13.50 to 14.00
St. Louis	7.50 to 8.00

SHEET CLIPPINGS, LOOSE

Chicago	7.75 to 8.25
Cincinnati	6.50 to 7.00
Detroit	6.50 to 7.00

STEEL RAILS, SHORT

Birmingham	14.00 to 15.00
Buffalo	16.00 to 16.50
Chicago	16.00 to 16.50
Cincinnati (dealers)	16.00 to 16.50
Cleveland (over 6 ft.)	14.50 to 15.00
Detroit	15.00 to 15.50
St. Louis	15.00 to 15.50

STOVE PLATE

Birmingham	14.00 to 14.50
Boston (consumers)	13.00 to 13.50
Buffalo	14.25 to 14.50
Chicago	14.75 to 15.25
Cincinnati (dealers) (net)	7.50 to 8.00
Cleveland	13.00 to 13.50
Detroit (net tons)	12.50 to 13.00
Eastern Pennsylvania	13.00 to 13.50
New York (dealers)	9.50 to 10.50
Pittsburgh	12.50 to 13.00
St. Louis	14.00 to 14.50

LOW PHOSPHORUS*

Buffalo, billet and bloom crops	17.00 to 17.50
Cincinnati (dealers)	15.50 to 16.00
Eastern Pennsylvania	19.00 to 20.00
Pitts. billet and bloom crops	19.50 to 20.00
Cleveland, billet and bloom crops	18.00 to 18.50

SHOVELING STEEL

Chicago	12.00 to 12.25
Pittsburgh	12.00 to 12.50
St. Louis	12.00 to 12.50

KNUCKLES, COUPLERS, SPRINGS

Chicago	14.50 to 15.00
Eastern Pennsylvania	17.50 to 18.00
Pittsburgh	17.50 to 18.00
St. Louis	13.50 to 14.00

FROGS, SWITCHES, GUARDS

Chicago	13.50 to 14.00
Eastern Pennsylvania	16.00 to 16.50
St. Louis	13.50 to 14.00

ANGLE BARS—STEEL

Buffalo	16.50 to 17.00
Chicago	14.00 to 14.50
St. Louis	13.25 to 13.75

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	$12.00 to 13.00
Boston (dealers)	13.00 to 13.50
Buffalo, No. 1	13.50 to 14.00
Buffalo, No. 2	15.00 to 15.50
Chicago, No. 1	12.50 to 12.75
Chicago, No. 2	12.25 to 12.50
Cincinnati, No. 1 (dealers)	8.00 to 8.50
Cleveland, No. 1	11.50 to 12.00
Eastern Pennsylvania	16.50 to 17.50
New York, No. 1 (dealers)	14.50 to 15.00
Pittsburgh, No. 1	11.50 to 12.00
Pittsburgh, No. 2	16.00 to 16.50
St. Louis, No. 1	11.00 to 11.50
St. Louis, No. 2	12.00 to 12.50

*Light plate scrap $1.50 less.

WROUGHT PIPE

Boston (dealers)	9.50 to 10.00
Eastern Pennsylvania	15.00
Buffalo	15.00 to 15.50
New York (dealers)	10.75 to 11.25

YARD WROUGHT

Boston	12.00 to 12.50
Eastern Pennsylvania	16.00

BUSHELING

Buffalo	14.25 to 14.75
Chicago, No. 1	10.25 to 10.75
Chicago, No. 2	8.25 to 8.75
Cincinnati, No. 1 (dealers)	8.00 to 8.50
Cleveland, No. 1	11.50 to 12.00
Cleveland, No. 2	11.00 to 11.25
Pittsburgh, No. 1	14.00 to 14.50
St. Louis, No. 1	10.50 to 11.00

MACHINE SHOP TURNINGS

Birmingham	8.00 to 8.50
Boston (chemical)	8.00 to 8.50
Buffalo	10.00 to 10.50
Chicago	7.75 to 8.25
Cincinnati (dealers)	6.50 to 7.00
Cleveland	10.00 to 10.50
Detroit	7.00 to 7.50
Eastern Pennsylvania	13.00 to 13.50
New York (dealers)	9.25 to 9.75
Pittsburgh	11.00 to 11.50
St. Louis	7.00 to 7.50

CAST IRON BORINGS

Birmingham (chemical)	15.50 to 16.50
Birmingham (plain)	8.00 to 8.50
Boston (chemical)	10.50 to 10.75
Boston (dealers)	8.00 to 8.50
Buffalo	11.75 to 12.25
Chicago	9.50 to 10.00
Cincinnati (dealers)	7.00 to 7.50
Cleveland	11.00 to 11.50
Detroit	8.00 to 8.50
Eastern Pennsylvania	13.50
Eastern Pennsylvania (chem.)	15.50 to 16.00
New York (dealers)	8.75 to 9.75
Pittsburgh	12.00 to 12.50
St. Louis	9.50 to 10.00
Valleys	12.50 to 13.00

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	8.00 to 8.50
Buffalo	11.75 to 12.25
Cincinnati (dealers)	6.50 to 7.00
Cleveland	10.00 to 10.50
Detroit	8.00 to 8.50
Eastern Pennsylvania	12.50 to 13.00
New York (dealers)	9.25 to 9.75
Pittsburgh	12.00 to 12.50

PIPES AND FLUES

Chicago	9.75 to 10.25
Cincinnati (dealers)	7.00 to 7.50
St. Louis	8.00 to 8.50

RAILROAD GRATE BARS

Buffalo	13.50 to 14.00
Chicago	13.75 to 14.25
Cleveland	13.50 to 13.75
Eastern Pennsylvania	13.50
New York (dealers)	11.00 to 11.50
St. Louis	13.00 to 13.50

FORGE FLASHINGS

Boston (dealers)	8.75 to 9.00
Buffalo	12.00 to 12.50
Chicago	9.00 to 9.50
Cleveland (under 10 in.)	11.50 to 12.00
Cleveland (over 10 in.)	11.50 to 12.00
Detroit	8.25 to 8.75
Pittsburgh	12.00 to 12.50

FORGE SCRAP

Boston (dealers)	8.50 to 9.00
Chicago	16.00 to 16.50
Eastern Pennsylvania	13.50

ARCH BARS AND TRANSOMS

Chicago	21.25 to 21.75
St. Louis	20.00 to 20.50

Iron Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	8.50 to 9.00
Buffalo	13.50 to 14.00
Chicago	12.50 to 13.00
Cleveland	12.50 to 13.00
Eastern Pennsylvania	13.75 to 14.25
Pittsburgh	14.00 to 14.50
St. Louis	8.50 to 9.00

STEEL CAR AXLES

Birmingham	18.00 to 19.00
Boston (shipping point)	18.00 to 18.50
Buffalo	16.50 to 17.00
Chicago	19.00 to 19.50
Cleveland	16.00 to 16.50
Eastern Pennsylvania	22.00 to 23.00
Pittsburgh	20.00 to 20.50
St. Louis	18.50 to 19.00

SHAFTING

Boston (shipping point)	15.50 to 16.50
Chicago	19.25 to 19.75
Eastern Pennsylvania	20.00 to 21.00
New York (dealers)	17.50 to 18.00
St. Louis	16.00 to 16.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	$16.00 to 16.50
Boston (consumers)	17.00 to 17.50
Buffalo, iron	15.50 to 16.00
Buffalo, steel	16.50 to 17.00
Chicago, iron	15.25 to 15.75
Chicago, steel	15.25 to 15.75
Cincinnati	11.00 to 11.50
Eastern Pennsylvania	16.50 to 17.00
New York iron (dealers)	14.25 to 14.75
Pittsburgh, iron	16.50 to 17.00
Pittsburgh, steel	17.50 to 18.00
St. Louis, iron	15.50 to 16.00
St. Louis, steel	16.00 to 16.50

NO. 1 CAST SCRAP

Birmingham, cupola	17.00 to 18.00
Boston	18.00 to 18.50
Buffalo	15.75 to 16.25
Chicago, No. 1 machinery	18.00 to 18.50
Chicago No. 1 railroad or agricultural	17.00 to 17.50
Cincinnati No. 1 Machinery cupola (net tons dealers)	17.00 to 17.50
Cleveland, cupola	16.75 to 17.25
Detroit (net tons)	14.50 to 15.00
Eastern Pennsylvania, cupola	17.50 to 18.00
New York, cupola (dealers)	14.50 to 15.00
Pittsburgh, cupola	16.00 to 16.50
San Francisco, delivered	20.00 to 21.00
Seattle	16.50
St. Louis, railroad	15.50 to 16.00
St. Louis, agricultural	16.00 to 16.50
St. Louis, machinery	18.00 to 18.50
Valleys	17.50

HEAVY CAST

Boston	17.00 to 17.50
Buffalo (breakable)	14.00 to 14.50
Cleveland	13.00 to 13.25
Detroit (Automobile) (net tons)	19.50 to 20.50
Eastern Pennsylvania	16.50 to 17.00
New York (dealers)	13.50 to 14.00
Pittsburgh	14.50 to 15.00

MALLEABLE

Boston, railroad	18.50 to 19.00
Buffalo	19.00 to 19.50
Chicago, agricultural	15.00 to 15.50
Chicago, railroad	16.50 to 17.00
Cincinnati, railroad (dealers)	14.00 to 14.50
Cincinnati, agricultural (dealers)	13.50 to 14.00
Cleveland, agricultural	17.50 to 18.00
Cleveland, railroad	18.50 to 19.00
Detroit	14.00 to 14.50
Eastern Pennsylvania, railroad	16.50 to 17.50
Pittsburgh, railroad	16.50 to 17.00
St. Louis, agricultural	13.00 to 13.50
St. Louis, railroad	14.50 to 15.00

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham	$15.00 to 16.00
Boston (dealers)	11.50 to 12.00
Buffalo	17.00 to 17.50
Chicago	14.75 to 15.25
Cleveland	17.00 to 17.25
Eastern Pennsylvania	15.50 to 16.50
New York	13.75 to 14.25
Pittsburgh district	17.00 to 17.50
St. Louis	14.50 to 15.00

LOCOMOTIVE TIRES

Chicago, No. 1	17.00 to 17.50
Chicago, cut	16.50 to 17.00
St. Louis, No. 1	16.00 to 16.50

LOW PHOSPHORUS PUNCHINGS

Chicago	15.00 to 15.50
Eastern Pennsylvania	16.00 to 17.00
Pittsburgh	18.50 to 19.00

Scrap

Better Conditions in Some Markets and Decline Seems Near Its End

CROSS currents in iron and steel scrap obscure the situation as is usual when the market is near a turn. There is evidence that the decline is near its end and that some elements of strength are appearing. Yet production is heavy and stocks bear down on the price. Somewhat better prices have been paid for heavy steel. Sentiment is improved.

Chicago, June 8.—The iron and steel scrap market is more confused. Consumer buying is below even the low level of recent weeks; the melt is contracting somewhat; many users have fair supplies and present prices are no inducement. On the other hand, some dealers claim to detect a shade of strength. For dealers to cover sales at current levels is increasingly difficult. Railroad offerings have been bringing 25 to 50 cents more per ton. Yard stocks in nearby small cities are large and menace any price rise in this market. Rejections, especially by a large user of melting steel, continue heavy. Prices are unchanged, with melting steel at $12.25 to $12.50, save for several adjustments in No. 1 busheling, grate bars and wrought.

Boston, June 8.—Heavy melting steel continues to decline. Some sales for delivery to Bethlehem Steel Co. are reported as low as $9.60 shipping point. The local market, however, is sufficient to cause a wide range in price.

New York, June 8.—Consuming demand for scrap is sluggish. Particularly is this so in cast and wrought scrap, prices on these grades being nominal. Nearly all buying by dealers is against back orders or for stock. Dealers are still paying $14.50, delivered, on railroad steel or equivalent for Bethlehem, Pa., and $12.50 for stove plate for Mahwah, N. J. On cast iron car wheels and rails for rolling, the market is down about 25 cents a ton.

Philadelphia, June 8.—Bethlehem Steel Co. has bought a round tonnage of No. 1 melting steel at $14.50, delivered Bethlehem. Otherwise consumer buying is small. Dealers desire to accumulate stocks but say present prices are too low to bring out much tonnage. The Pennsylvania railroad has closed a large list, obtaining above and below $15.50 for No. 1 heavy melting steel.

Buffalo, June 8.—Dealers' confidence in heavy melting steel values has been reaffirmed by bids of $15.75 for railroad lists and No. 1 material is being held for this price. Ordinary material is worth about $1 less although no large consumer here has an offer of more than $14.50 and may have bought small lots for less.

Pittsburgh, June 8.—Definitely on a higher plane, reached by the purchase of heavy melting steel scrap by an Ohio user at $16.50 and by offers of users nearer by to pay $16, the scrap trade is inclined to look on the present movement as a slight flurry. While one West Virginia user was able to pick up a small tonnage at $15.50 recently, it is not expected here that the market will again relapse. The steel scrap on the Pennsylvania railroad list brought in the neighborhood of $16.25.

Youngstown, O., June 8.—The scrap market is featureless. Prices are nominal and a test of the market would undoubtedly result in sales at 50 cents below quotations.

Cleveland, June 8.—Iron and steel scrap trading still is limited and strength appearing in some other centers is not reflected here. While prices are easy the market is untested.

Detroit, June 8.—General conditions in iron and steel scrap remain unchanged. Demand is small and only for small tonnages.

Cincinnati, June 8.—With consumption of iron and steel scrap on the decline, several consumers have requested dealers to hold shipments.

St. Louis, June 7.—The only change in iron and steel scrap is somewhat greater activity among dealers. This is attributed chiefly to an oversold condition, with those having made short commitments wishing to catch up. Some dealers whose yards are well depleted are buying a few bargains to lay down, and on certain items there is speculative buying in a limited way. Altogether dealer buying was better than in some while, and the steady price declines of the past month or more have halted.

Birmingham, Ala., June 7.—Less activity is noted in iron and steel scrap. Quotations are weak but unchanged. Heavy melting steel is held at $13 per ton but larger consumers apparently have stock for some time.

Sheets

Good Tonnages of Automobile Sheets Sold at 4.20c—Many Mills Active in Chicago

SALES of 10,000 tons of automobile body stock to the Chevrolet Motor Co., and 1000 tons to Dodge Bros. featured an otherwise dull sheet market during the week. The Chevrolet tonnage was distributed among several mills. The price that applied on all of the business was 4.20c, Pittsburgh. Reflecting dullness in the market numerous mills have been offering sheets in the Chicago territory.

SHEET PRICES, PAGE 1512

Pittsburgh, June 8.—Although sheet specifications generally show little or no improvement, some automobile companies are taking more tonnage. One consumer placing about 50 per cent of its requirements with a large maker here, increased its tonnage receipts during the first five months of the year by about 50 per cent over what it took in the corresponding period in 1925. Some body makers and one Detroit automobile manufacturer is seeking large sheet tonnages this week. Their efforts to obtain lower prices than 4.20c so far are unsuccessful. Many orders are for small quantities of sheets sheared to exact size. Blue annealed sheets for agricultural implement makers, tank builders, stove and range manufacturers, and other users are fairly active. Prices of 2.30c and 2.35c are more numerous although 2.40c still is retained on certain lots. While a sale of galvanized at 4.25c has been reported, this seems to have little real foundation, as the minimum this week is 4.30c as against 4.35c last week. The 4.40c level continues the top and is quoted on small quantities. The figures usually quoted on black sheets are 3.10c and 3.15c although some small lots continue to bring 3.25c. Any prices such as 3.00c or 3.05c that have appeared are made when the accompanying extras are so profitable that the shading of the base price is possible. A case in point is where 450 tons of black sheets were sold at 3.00c base, but the three extras of 0.75, 0.25 and 0.10 cents respectively, brought the price to 4.10c. Mill operations average 60 per cent. Some plants are on a 55 per cent basis.

Boston, June 8.—Sheet sales have improved slightly. One dealer reports a sale of 300 tons. Galvanized sheets are in best demand, with the price holding at 4.50c Pittsburgh. Black sheets are 3.20c to 3.25c.

Philadelphia, June 8.—Sheet buying is well sustained, and eastern mills are operating at 70 to 75 per cent. Black sheets are 3.10c to 3.25c, Pittsburgh; blue annealed 2.35c to 2.40c and galvanized 4.30c to 4.40c. These prices are subject to occasional irregularities on attractive tonnages.

Youngstown, O., June 8.—Little tonnage of high grade sheets has been placed with producers since the re-

cent 2000-ton purchase by the Dodge Bros. and the 10,000-ton distribution by the Chevrolet Motor Co. at 4.20c. Most of the price weakness centers in the Detroit district. Certain mills, however, are shipping black tonnage into the Chicago district and are absorbing the price differential. Black tonnage can be purchased freely in the market at 3.15c. Galvanized is quoted at 4.30c and 4.40c. Blue annealed is held at 2.40c, producers in many cases having discarded quotations above this level.

Chicago, June 8.—The sheet market is no more satisfactory in the matter of price but specifications have been a shade better. The leading independent maker is giving two to three weeks delivery on black and galvanized and 30 days on blue annealed. This interest is operating 23 of its 28 hot mills, a rate considered satisfactory for this season. Some western makers claim not to be competing for business in the South, where the $2 per ton differential in price in favor of western mills is more than wiped out by adverse freight rates. Average prices for delivery in Chicago are 4.55c for galvanized, 3.35c for black and 2.55c for blue annealed.

St. Louis, June 8.—The past week or ten days have witnessed a fair revival in demand for sheets. Sales and inquiries, while not heavy, are better than in the preceding six weeks.

Cleveland, June 8.—Volume of sheet tonnage has improved slightly. Some makers received more inquiries during the past few days than in weeks. Prices continue unstabilized. Black sheets are unusually weak. Although leading makers are quoting 3.25c and meeting competition at 3.15c, smaller mills have cut back to 2.90c Pittsburgh. A 3.00c price is more commonly quoted than previously. On 1200 to 1800 tons of one pass black, 3.05c was named and on 600 tons of blue annealed the quotation from two sources was 2.30c. Blue annealed ranges from 2.30c to 2.40c. Galvanized is 4.20 to 4.40c with little tonnage moving. Autobody and full finished sheets again are firmest. Although under 4.20c is rumored, larger makers hold steady at that figure for third quarter.

Strip Steel

Buying Reviving After Recent Slump and Prices Hold

STRIP PRICES, PAGE 1512

Pittsburgh, June 8.—Strip makers are more encouraged than since business commenced to fall off the latter half of May. Operations are 70 to 75 per cent and orders so far this month are equal to those received in a like period in May. Hot strip prices are firm at 2.30c and while cold has been subjected to some cutting to 3.70c, 3.75c has not yet been departed from by producers here.

Cleveland, June 8.—Strip steel sales have increased slightly in the past few days, one maker of hot strip receiving better orders and inquiries. Prices are steady at 2.50c on narrow and 2.30c on wide, Pittsburgh. Some weakness was noted in cold finished at 3.75c Pittsburgh, but this is not general, this quotation holding for all tonnages.

Tin Plate

Market Is Steady—Last Half Tonnage Shows Usual Letdown

TIN PLATE PRICES, PAGE 1512

Pittsburgh, June 8—Predictions concerning the improvement of tin plate shipments in the first five months of this year over the same period in 1925 are being borne out by figures that have been compiled. Last half tonnages gradually finding their way to the books of makers show the usual letdown from first half but from present appearances tonnages for the entire year will at least equal those of 1925, and possibly exceed them despite the late planting season east of the Mississippi river. Tin plate mill operations are on an 80 to 85 per cent basis and the open market figure is unchanged at $5.50.

Philadelphia, June 8.—Contracts for tin plate for third quarter now are under negotiation. The business is expected to be closed shortly, as mills are making up July schedules.

Pipe

Mill Operations at 90 Per Cent —No New Line Pipe Activity— Cast Grade Less in Demand

MILL operations continue about 90 per cent, favored with numerous small orders. Line pipe was inactive this past week, no new inquiries or awards being noted. Cast pipe is less in demand. Few large inquiries are pending. Municipal buying is easing off in the East. Sellers in the Middle West find early summer demand about normal. Prices continue steady.

PIPE PRICES, PAGE 1512 AND 1548

Pittsburgh, June 8.—Pipe mill operations generally are full, averaging about 90 per cent. This is due to the multiplicity of small orders coming in regularly each week, one to five carloads at a time with an occasional larger one. Generally, lap-welded pipe deliveries are from four to five weeks deferred but on the buttwelded product shipments often are made from stock the same week the orders are received. Sustained demand makes for firmness in the price situation and prices as quoted by jobbers in this immediate territory are firmer than they have been at any time in two or three years.

Boston, June 8.—Private buying of cast iron pipe holds up well but municipal lettings are quiet. Prices are firm and delivery on small sizes holds at about 60 days.

New York, June 8.—Municipal buying of cast pipe is featured by the placing of two lots of around 400 to 500 tons each. Pipe makers look for the city water department to come in the market within the next few days for about 2000 tons. Aside from this little municipal work is in prospect. Although the tendency is somewhat easier, reflecting seasonal dullness, prices remain virtually unchanged.

Chicago, June 8.—This is the season for small municipalities to place their mid-summer requirements of cast iron pipe and business is up to the level of past years. Bookings of cast pipe about equal shipments, but it has taken an excess of bookings in southern territory to maintain this condition. The receipt of French pipe at Des Moines, Iowa, has not disturbed the price situation in this district and is regarded as a local factor. Cast iron pipe is quoted at Chicago at $53.20 to $54.20 for 4-inch, $49.20 to $50.20 for 6 to 24-inch, and $46.20 for over 24-inch.

Birmingham, Ala., June 7.—Pressure pipe shops in this district are active and shipments continue good. Quotation are slightly weaker. Inquiries are not improved. One or two shops report delays in deliveries. Soil pipe and fittings shops still are looking forward to improvement in demand.

CONTRACTS PLACED

500 tons, 6 to 8-inch pipe, Montclair, N. J., to the Warren Foundry & Machine Co.
468 tons, 4 to 12-inch pipe for Chandler, Ariz.; general contract to Fisher & McCall.
425 tons, pipe for Belmar, N. J., to the United States Cast Iron Pipe & Foundry Co.
236 tons, 10 and 8-inch De Lavaud pipe, La Mesa irrigation district, La Mesa, Calif., to United States Cast Iron Pipe & Foundry Co.
160 tons, 6-inch, Marion, Mass., to United States Cast Iron Pipe & Foundry Co.
100 tons, Yakima, Wash., to United States Cast Iron Pipe & Foundry Co.

CONTRACTS PENDING

600 tons, 6 to 12-inch, New London, Conn.; bids in.
203 tons, 6 and 8-inch class B pipe for sewer district No. 5, Glendale, Calif.; bids in June 17.
200 tons, cast pipe and fittings and 1300 feet of steel pipe, Brooklyn, N. Y.; Pentock Construction Co., Sharon, Pa., low on the gen-

eral contract.
130 tons, 4 to 18-inch class B pipe, Alhambra, Calif.; bids in June 14.
103 tons, 12-inch class B pipe for South Pasadena, Calif.; bids in June 23.

Bolts, Nuts, Rivets

Some Contracts for Third Quarter Being Taken at Unchanged Price

NUT AND BOLT PRICES, PAGE 1512

Chicago, June 8.—An important maker of bolts and nuts is soliciting third quarter contracts on the basis of present quotations, 50, 10 and 10 off for large machine bolts. This level does not reflect the $2 advance in soft steel bars announced by western mills to apply on third quarter bars. Specifications for bolts and nuts continue light and improvement is not looked for until inventory is past. Heavy specifications for third quarter are expected from tractor and implement interests. Small rivets are quoted at 70, 10 and 5 to 70 and 10 off, while structural rivets on average business are quoted at 2.75c, Chicago.

Philadelphia, June 8.—Announcement of third quarter prices on bolts and nuts is expected within a week and present indications are there will be no change.

Pittsburgh, June 8.—While some price cutting in rivets is being done, the market in nuts and bolts continues firm. In the former product, operations are 40 to 50 per cent and some plants with large capacity are endeavoring to keep their equipment active at the expense of price. Nut and bolt operations average 65 to 75 per cent. While one quotation encountered on structural rivets recently was as low as 2.35c, large producers here are not meeting that figure and continue to quote 2.60c. One or two are taking attractive orders at 2.50c.

Iron Ore

Demand Satisfied for Present—Shipments Slow

Cleveland, June 8.—Lake Superior iron ore producers have not revised their earlier estimate of the tonnage of ore that will be required for shipment this season, despite the slowing up of pig iron production. The late start in shipping has led some observers to believe there will be a rush at the end of the season. Receipts at Lake Erie ports to June 1 totaled 3,337,888 tons compared with 6,274,835 tons last year, and shipments from Lake Erie ports to furnaces amounted to 3,864,156 tons against 5,529,279 tons in the same period of 1925.

Some negotiations for ore that have been pending several weeks have not been closed, and no new inquiries have developed.

Tin plate first was manufactured in Bohemia about 1600. It was first successfully made in France in 1714; in England in 1720 to 1725; and introduced in Sweden in 1739.

Bars

Recent Advance Held for Most Part, with Some Shading—Buying Is Better

SOMEWHAT better buying and specification of soft steel bars has developed but the rate maintained early in the year is not being equaled. Midsummer inventory is one factor that is limiting buying. While the newly established higher quotation is holding for most business, some concessions still are being made to preferred customers on attractive lots.

BAR PRICES, PAGE 1512

Chicago, June 8.—Consumption, shipments and price form distinct departments of the soft steel bar market. Consumption has undergone a moderate shrinkage since first quarter and the tendency is slightly downward as many tractor and implement makers approach the July 1 inventory date and building slows down. Specifications from the automotive industry show scarcely any change since first quarter. Freight car building is the only really weak spot, but improvement here is looked for next quarter. Shipments, while heavy, indicate further curtailment of stocks in users' hands. Mill backlogs are negligible, orders and specifications are synonymous, and practically warehouse service is given. Makers claim not to be accepting extensions to second quarter contracts and to be standing on 2.10c, Chicago, for tonnage and 2.20c for small business. Some business has been driven in by the recent $2 advance, but a real test of the market has not been made. Reinforcing bar warehouses are seeking more to maintain present prices than to advance them.

Rail steel bars are quotable at 1.90c to 2.00c, Chicago, for one reason because of competition for road work. Bar iron is unchanged at 2.00c, Chicago. Orders for both products are fair.

New York, June 8.—Large producers are asking 2.00c, Pittsburgh, on steel bars, and 2.10c on small orders. Practically the entire trade is under contract one at 1.90c with some preferred customers at somewhat less.

Philadelphia, June 8.—While 2.00c Pittsburgh is the usual open price on soft steel bars it is admitted generally that no difficulty is met in placing attractive tonnages at 1.90c Pittsburgh. With some preferred customers even the latter is not the minimum.

Buffalo, June 8.—Bars hold firm at 2.265c, with fair business being placed. Mills are not giving quite as prompt shipments as formerly. Operation is 75 to 80 per cent of capacity.

Pittsburgh, June 8.—During the past week, bar specifications increased and attractive lots have been booked, involving single carloads to 600 tons. Some of the larger lots came from cold finishers. Not much progress has been made on third quarter contracts except in the case of one or two large producers. The figure openly quoted in the market is 2.00c, with 2.10c applying on small lot transactions.

Refined iron bars are quiet, with small amounts being bought each week by the various consuming lines. Prices start at 3.00c.

Cleveland, June 8.—Ordering out of steel bar tonnage against contracts by consumers in this district is on a heavier scale and the market generally is more active. A number of new contracts for third quarter specification are being closed though most of the mills are not pushing this class of business at present. While 2.00c, Pittsburgh, or 2.19c, Cleveland, is the open price for third quarter on orders of size and $2 higher on small lots, it is indicated the mills would not refuse additional specifications, at least for this quarter at 1.90c, Pittsburgh. It also is reported that a considerable tonnage booked at 1.90c will be carried over into the third quarter. The automotive industry is placing some tonnage for third quarter. Some good sized business in bands for strip manufacture is pending.

Cold Finished Steel

Better Diversity in Orders Attributed to Publicity Campaign

Pittsburgh, June 8.—Diversified business is developing each week in cold-finished bars. Included in fairly large orders for automotive purposes is some tonnage for various other uses, some directly traceable to this industry's recently inaugurated publicity campaign. Finishers are operating on an average of 65 or 70 per cent of capacity and are maintaining the price at 2.50c. Nothing so far has been done regarding third quarter contract renewals.

Hoops and Bands

Increase in Orders Gives Confidence to Producers—Price Firm

HOOP PRICES, PAGE 1512

Pittsburgh, June 8.—Hoop and band orders again show a slight increase and producers are more sanguine than two or three weeks ago. More automotive tonnage is developing, some from stamping companies, and the price is firm at 2.50c. Operations average 75 per cent of capacity.

Structural Shapes

Demand Well Sustained—Railroad and Highway Bridgework Heavy—New York Activity Undiminished

BUYING of structural steel has shown improvement from the temporary recession of the previous week and is slightly above the average rate for this year. Awards are more numerous and some large tonnages are involved including 4000 tons for a New York apartment. Awards in New York for buildings in May totaled 30,000 tons. Reports are that the leading interest at Chicago took 12,000 tons for the Pittsfield building there. Inquiry includes about 33,000 tons for bridgework, the largest of which is for spans at Gallipolis, O., and Weirton, W. Va., taking 7500 tons.

Plain material prices continue 1.90c to 2.00c Pittsburgh equivalents with rumors of $2 a ton price advance inaugurated for third quarter.

STRUCTURAL SHAPE PRICES, PAGE 1512

New York, June 8.—Structural activity is holding up surprisingly well considering the advanced season. A leading award involves 4000 tons for an office building. Plain material is holding around 1.90c, Pittsburgh, with shading of 5 to 10 points on especially attractive business.

Structural work placed in the New York metropolitan district in May, exclusive of bridges, piers, subway work etc., involved approximately 30,000 tons, according to the monthly compilation of the Structural Steel Board of Trade. This was slightly under the April total, which was approximately 30,500 tons.

Boston, June 8.—Mills report an improved demand for structural material in New England. Inquiry for 1200 tons for a bridge is reported. The price is unchanged at 1.85c Pittsburgh or 2.215c delivered.

Philadelphia, June 8.—Structural shape market continues 1.80c to 1.90c Pittsburgh with occasional sales under 1.80c. Mill operations continue active following the large rollings of May.

Buffalo, June 8.—Shape business has improved within the past ten days, and a fair amount of business has been taken at 2.165c, Buffalo. Mill operation in the district is close to 80 per cent of capacity.

Pittsburgh, June 8.—Structural shape fabricators are encountering a more active market. The 1.90c figure is firm on plain material. Some extremely low bids recently have been developed on work fabricated and erected, one job here this past week bringing only $78 per ton, but it is understood that the work was exceedingly plain.

Cleveland, June 8.—Sentiment in the local structural market is improved. Plans are expected out in about 30 days for the main viaduct of the union terminals project, steel requirements being estimated at 10,000 to 15,000 tons. Considerable bridgework is expected to be active, including 7500 tons for highway bridges at Gallipolis, O., and Weirton, W. Va. Plain material is steady at 1.90c Pittsburgh.

Chicago, June 8.—Both in structural awards and new business a slight contraction has been evident. This is due in part to difficulties with building trade labor. An unverified report has it that the leading interest has taken 12,000 tons for the Pittsfield building, Chicago. Plans are out for the Midland club, requiring 4000 tons. Makers say that 2.10c, Chicago, is their minimum on tonnage business and 2.20c on small business. Illinois Steel Co. has booked 5700 tons of plain material for fabricators' and manufacturers' stocks.

Awards Compared

	Tons
Awards this week	35,787
Awards last week	23,534
Awards two weeks ago	51,555
Awards this week in 1925	34,165
Average weekly awards, May	38,357
Average weekly awards, 1926	28,488
Total awards to date, 1925	748,752
Total awards to date, 1926	662,542

CONTRACTS PLACED

8100 tons, instead of 7500 tons as previously noted, state bridge, Bath, Me., to the McClintic-Marshall Co.

6010 tons involved in the following projects:

18-story office for the 40 East Forty-ninth Street Corp., to be erected at 36-40 East Forty-ninth street, New York, to the Harris Structural Steel Co.

6-story building for A. Traina & Co., 695 Fifth avenue, New York, to the Harris Structural Steel Co.

4-story warehouse, Perth Amboy, N. J., to Walter Jensen for fabrication only.

Loft for the Realty Construction Corp., Seventh avenue and Twenty-eighth street, New York, to the McClintic-Marshall Co.

Power house, Delawanna, N. J., to the McClintic-Marshall Co.; Henry A. Kent & Co., general contractors.

Salvage residence, Locust Valley, Long Island, to the McClintic-Marshall Co.; Jacobs & Young, general contractors.

Overlook hospital, Summit, N. J., to the McClintic-Marshall Co.; Charles R. Hedden & Co., general contractors.

Telephone building, 183-7 Jefferson street, Perth Amboy, N. J., to Eidlitz & Ross; John W. Patience, general contractor.

17-story office and loft, 112-6 East Thirty-second street, New York, to the Taylor-Fichter Steel Construction Co.; Willetts Construction Co., general contractor, 280 Madison avenue, New York.

200 tons, tennis court for H. Roger Winthrop, Woodbury, N. Y., to the National Bridge Works.

4000 tons, office building, 50 Broadway, New York, to Levering & Garrigues Co.

3500 tons, shapes and plates for Southern Pacific Equipment Co., San Francisco, 2334 tons to eastern mills and 1166 tons to Pacific Coast mills.

3500 tons, City hall annex, Philadelphia, to American Bridge Co.

2100 tons, 3-story, 201 x 575-foot plant for Reo Motor Car Co., Lansing, Mich., to Jarvis Engineering Works.

1900 tons, industrial building in eastern Pennsylvania, to independent fabricator.

1725 tons, Chatelaine Tower hotel, Chicago, to Hansell-Elcock Co. Roy F. France & Co., 155 North Clark street, Chicago, architect.

1500 tons, four factory buildings for Springfield Malleable Co., Springfield, O., to Bellefontaine Bridge & Iron Co.

1300 tons, Eagle avenue bridge, Fordson, Detroit, to McClintic-Marshall Co.

835 tons, building addition at Pearl and Willoughby streets for the Brooklyn Edison Co., Brooklyn, N. Y., awarded an unnamed fabricator.

800 tons, shapes and plates, furnace stack and changes to stack house bins, etc. for Wheeling Steel Corp. at its LaBelle works, Steubenville, O., through Arthur G. McKee & Co., Cleveland, engineer, to Pennsylvania Engineering Works.

800 tons, Pennsylvania railroad bridges, lines west, 700 tons, to American Bridge Co. and 100 tons to McClintic-Marshall Co.

700 tons, power house for Phoenix Utility Co., Dallas, Tex., to Mosher Mfg. Co.

700 tons, addition to Mount Mercy hospital, Buffalo, to Buffalo Structural Steel Co.

700 tons, Maltz building, Varick and West Houston streets, New York, to Levering & Garrigues Co.

650 tons, Pearl Street temple, Cleveland, to Forest City Structural Steel Co.

500 tons, bridgework for Kingfisher county, Okla., to Patterson Steel Co.

500 tons, Schroeder & Koppel building, Fifth avenue and Fifty-seventh street, New York, to Hay Foundry & Iron Works.

450 tons, platform extensions for Chicago Rapid Transit Co., Chicago, to Hansell-Elcock Co.

450 tons, warehouse for Donahoe's, Inc., Northside, Pittsburgh, to the Keystone Engineering Co.

400 tons, bank building for the Commercial Trust Co., New Britain, Conn., to unnamed fabricators.

400 tons, bus garage, Philadelphia Rapid Transit Co., Philadelphia, to Belmont Iron Works.

325 tons, shapes and plates, drum gates for Pacific Gas & Electric Co., Pitt river plant No. 4, Mt. Shasta, Calif., to Moore Drydock Co.

300 tons, building at Sixteenth and Market streets, Philadelphia, to Belmont Iron Works.

300 tons, Pennsylvania railroad bridge, to the American Bridge Co.

300 tons, bridge for the Reading Co., to the Phoenix Bridge Co.

260 tons, shapes and plates, roaster and treater for American Smelting & Refining Co., San Francisco, to Minneapolis Steel & Machinery Co.

250 tons, loft at East Thirty-fifth street, New York, to A. E. Norton Inc.

230 tons, field house for Drake university, Des Moines, Iowa, through Charles Weitz's Sons, to American Bridge Co.

225 tons, theater building for the Canton-Marous Theater Corp., Canton, O., to the American Bridge Co.

200 tons, building for Second Northwestern State bank, Chicago, to Holmes-Pyott Co.

200 tons, plate girder spans for the Rock Island railroad at Joliet, Ill., to American Bridge Co.

182 tons, two bridges for Oregon highway commissioner, Portland, Oreg., to unnamed

interest.
175 tons, building extensions for Standard Seamless Tube Co., Economy, Pa., to the Pittsburgh-Des Moines Steel Co.
175 tons, bridge for Susquehanna & New York railroad, to Phoenix Bridge Co.
170 tons, Horace Mann school, Gary, Ind., to Union Foundry Works; Rufus Danner, Hammond, Ind., contractor.
150 tons, edifice for Plymouth Congregational church, Des Moines, Iowa, to Pittsburgh-Des Moines Steel Co.
150 tons, foundation work for Brooklyn-Edison Co. building, Pearl and Willoughby streets, New York, to Hedden Iron Construction Co. 700 tons still pending.
150 tons, Steicks building, Middletown, Conn., to the Berlin Construction Co.
150 tons, Harvey Lewis building, Hartford, Conn., to the Berlin Construction Co.
140 tons, building for the Lorraine Mfg. Co., Saylesville, R. I., to the Jones & Laughlin Steel Corp.
135 tons, distributing station, Pacific Gas &

(*Concluded on Page* 1527)

Concrete Bars

Market Spotty With Volume Steady—Prices Continue Unchanged—Awards Numerous

FAILURE of large tonnage contracts to appear in the concrete bar market prevents awards maintaining the high rate of recent weeks. Lettings were featured by closing of 2300 tons for a filtration plant at Cleveland. Inquiries continue numerous but mostly for small lots. Prices are steady, failing to show unusual firmness in the face of the commercial bar price increase.

REINFORCING BAR PRICES, PAGE 1512

Chicago, June 8.—Three reinforcing bar jobs, each requiring 1300 to 1500 tons, are on the verge of being closed. Despite the advance in the mill price of soft steel bars, the warehouse bar situation has been less satisfactory, and some shading is reported. Generally 2.60c, Chicago warehouse, is quoted on billet bars and 1.90c to 2.00c on rail steel bars.

Boston, June 8.—Recent concrete bar awards have been few, and competition is keen. Inquiry mostly in small lots totals 600 or 700 tons. The Boston warehouse price is from 2.90c to 3.00c.

Philadelphia, June 8.—Concrete bars for mill shipment now are quoted 1.90c to 2.00c Pittsburgh. Warehouse sales here are bringing from 3.00c to 3.15c delivered locally with occasional sales below 3.00c.

Pittsburgh, June 8.—Inquiries are becoming more numerous. Another state highway letting took place June 3 at Harrisburg, Pa., and the bar awards on these will probably be strung along for several weeks among various sellers. Quotations are firm at a 2.00c minimum.

Cleveland, June 8.—Concrete reinforcing bar activity is featured by the award of 2300 tons for the Willow sewage disposal plant to Bourne-Fuller Co. More small lots are up, involving about 50-75 tons each. New billet bar prices are steady at 2.19c Cleveland or 2.00c Pittsburgh. Rail steel quotations are unchanged at 1.80c to 1.90c mill.

Buffalo, June 1.—Activity in the reinforcing bar market is the highest for several months in this district. Some contractors have found it impossible to get mill shipments as quickly as necessary because of having deferred purchases and have been compelled to buy from stocks at higher prices. Relatively little mill business is being quoted now, although the former price of 2.265c is still in effect. The stock shipment price is 2.75c.

Awards Compared

	Tons
Awards this week	10,500
Awards last week	1,399
Awards two weeks ago	7,217
Awards this week in 1925	8,315
Average weekly awards, May	6,839
Average weekly awards, 1926	5,555
Total awards to date, 1925	155,499
Total awards to date, 1926	132,700

CONTRACTS PLACED

2300 tons, Willow sewage disposal plant, Cleveland, through Mellon-Stuart Co., Pittsburgh, general contractor, to Bourne-Fuller Co.
600 tons, sewage disposal plant at Bloomington, Ill., to Laclede Steel Co.
550 tons, Federal Cement Co. plant, Buffalo, to a Buffalo fabricator.
500 tons, bridge at Grand Rapids, Mich., to Kalman Steel Co. Folwell-Ahskog Co., 323 North Michigan avenue, Chicago, engineers.
500 tons, hospital building, Mare Island, Calif., to unnamed San Francisco jobber.
400 tons, addition to Crawford avenue power station of Commonwealth Edison Co., Chicago, to Kalman Steel Co. and Truscon Steel Co. Bates & Rogers Construction Co., 37 West Van Buren street, Chicago, contractor.
400 tons, sewer, Bronx, N. Y., to Concrete Steel Co.
325 tons, plant for Southern California Edison Co., Auberry, Calif., to Truscon Steel Co.
320 tons, foundations for city hall, Los Angeles, to American System of Reinforcing.
300 tons, subway for New York, to Truscon Steel Co. Heyman & Goodman, general contractors.
300 tons, service building for Packard Motor Car Co., Bronx, N. Y., to Jones & Laughlin Steel Corp.
300 tons, Wellington apartment, Chicago, to Inland Steel Co.
250 tons, hotel, Montauk Point, N. Y., to Kalman Steel Co.
230 tons, Leland hotel, Chicago, to Calumet Steel Co. Dubin & Eisenberg, 14 West Washington street, Chicago, architects.
230 tons, apartment at Gordon and Clarendon avenues, Chicago, to Calumet Steel Co. E. J. Meles, 109 North Dearborn street, Chicago, architect.
225 tons, Stone street garage, Rochester, N. Y., 25 tons to Jones & Laughlin Steel Corp. and 200 tons to Bourne-Fuller Co. through Turner Construction Co., general contractor.
204 tons, four bridges for Oregon highway commission, Portland, Oreg., to unnamed interest.
200 tons, Pennsylvania state road work, through the Leonard Paving Co., to the Truscon Steel Co.
200 tons, building for Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y., to Concrete Steel Co.
200 tons, automobile sales building for E. C. Anthony, Ellis and Van Ness avenues, San Francisco, to Cahill Bros.
180 tons, roadwork in New Jersey, to Kalman Steel Co.
180 tons, sewage job, Philadelphia, to the Jones & Laughlin Steel Corp.
176 tons, Hollywood playhouse, Los Angeles, to George L. Eastman Co.
160 tons, Ebinger school for board of education Chicago, to Kalman Steel Co.
160 tons, Bradwell school for board of education, Chicago; to Kalman Steel Co.
140 tons, West Carting Co. building, Rochester, N. Y., to a Buffalo fabricator.
130 tons, Hilo Varnish Co. plant, Brooklyn, N. Y., to Igoe Bros.
120 tons, roadwork at Cranford, N. J., to Igoe Bros.
110 tons, test building for General Electric Co., Schenectady, N. Y., to Kalman Steel Co.
110 tons, Elks club, Santa Barbara, Calif., to Los Angeles Iron & Steel Co.
100 tons, Pennsylvania state road work through the Leonard Paving Co., to the Concrete Steel Co.
100 tons, building for American Express Co., Long Island City, N. Y., to Jones & Laughlin Steel Corp.
100 tons, bridge in Westchester county, New York, to Joseph T. Ryerson & Son Inc.
100 tons, road work in Cook county, Chicago, to Calumet Steel Co.
100 tons, Rogers Park hospital, Chicago, to Jones & Laughlin Steel Corp. Ebenholtz & Jorgensen Co., 1720 North California street, Chicago contractor.

CONTRACTS PENDING

4000 tons, pier, Mobile, Ala.; Duloutte & Ewing, New Orleans, awarded general contract.
1300 tons, apartment on Lakeview street, Chicago; Rissman & Hirschfeld, 64 West Randolph street, Chicago, architects.
1300 tons, Sheridan-Grace apartment, Chicago; Robert S. deGolyer & Co., 307 North Michigan avenue, Chicago, architects.
600 tons, sewage disposal plant at Alliance, O.; George B. Gasgoigne, Cleveland, engineer. Bids in late in August.
500 tons, Mid-Hudson bridge at Poughkeepsie, N. Y.; Blakeslee Rollins Corp., Boston, awarded general contract.
500 tons, office at Savanaah, Ga., for Atlantic Coast Line railroad; Dwight P. Robinson & Co. Inc., New York, builder
450 tons, Duquesne bridge at McKeesport, Pa.; bids being asked.
400 tons, bridge, Bath, Me.; Foundation Co., New York, awarded general contract.
350 tons, Moore Bros. Dairy Co. plant, Meadville, Pa.; bids in this week.
300 tons, two Niagara county, N. Y., road projects, People's Paving Co., Buffalo, contractors.
270 tons, Beth Israel hospital, Newark, N. J.; Starrett Bros., New York, general contractors.
250 tons, addition to Art Metal Construction Co., Jamestown, N. Y., bids in.
250 tons, Horace Mann school, Gary, Ind.; Rufus Danner, Hammond, Ind., general contractor.
200 tons, Crestshire apartment, Germantown, Pa.; pending.
180 to 250 tons, building for Modern Laundry, White Motor Co., experimental plant addition and plant for Willard Storage Battery Co., Cleveland; pending.
150 tons, sewage disposal plant at Delaware, Ohio; George B. Gasgoigne, Cleveland, engineer. Bids in latter part of July.
150 tons, Rittenhouse apartment, Philadelphia; pending.
150 tons, Belmont filter plant, Philadelphia; pending.
100 tons, New York State bank, Albany, N. Y.; Foundation Co. general contractor.
100 tons, Home Savings bank, Albany, N. Y.; Foundation Co. general contractor.
100 tons, high school, Dansville, N. Y.; bids in.
100 tons, Loew's theater building, Pittsburgh; bids closed June 9.

Rails, Cars

Locomotive Buying Features Equipment—Car Awards Largest Since March

PURCHASE of 50 freight engines by Illinois Central and decision to build 60 locomotives in its own shops by the Pennsylvania features the locomotive market. Closing of 1000 cars each by Baltimore & Ohio and Jersey Central makes this week the most active since March. May freight car awards of 438 were the smallest since June, 1924. Norfolk seeks 55,000 tons of rails.

RAILROAD TRACK MATERIAL PRICES, PAGE 1512

New York, June 8.—Domestic freight car orders in May involved 448, the smallest monthly total since June, 1924, when 438 cars were awarded. The largest order was that of the Texas & Pacific, involving 300 cars. Further comparisons follow:

May	448
April	4,615
March	8,995
February	12,895
January, 1926	8,830
December	16,885
November	11,685
October	11,145
September	7,905
August	2,875
July	800
June	1,835
May	6,985
1923 total	103,487
1924 total	144,425
1925 total	77,110

Current car buying is the largest since March totaling about 3300 including two 1000-car orders. Featuring the locomotive market is the award of 60 locomotives by the Pennsylvania railroad, to its Altoona, Pa., shops and 50 additional by the Illinois Central.

Boston, June 8.—Sales of frog and switch material have improved, the principal tonnage coming from the Boston & Maine railroad. Street railways have been buying. Demand for bolts, nuts and spikes is reported better.

Pittsburgh, June 8.—Light rail orders continue in slightly larger amounts from West Virginia and eastern Kentucky coal fields where attractive coal contracts recently have been taken for shipment to lake ports. These rail orders, usually a carload or two at a time but occasionally running 100 or 150 tons, carry prices of $34 although rail steel competition is sometimes met at a slightly lower figure.

Track accessory orders all are for small amounts. Practically no backlogs exist among makers, all buying being done on a hand-to-mouth basis. Prices are unchanged but firm.

Chicago, June 8.—Norfolk & Western railroad is inquiring for 55,000 tons of rails, with fastenings in proportion, but this business is expected to go entirely to eastern mills. The Southern Pacific is said to have divided its 24,000 tons of rails between the Bethlehem and Colorado companies. Western mills have put on their books their share of the 30,000 tons of rails placed 10 days ago by the Chesapeake & Ohio. One railmaker has booked 3100 tons for frog and switch makers and 2100 tons for the Southern railroad. New business in fastenings has aggregated 3000 tons.

The Rock Island has placed 200 underframes with the Bettendorf Co., but has not closed yet on 188 coal car bodies. The Chicago & North Western is about to close on 500 stock car bodies. Car builders look for much better business from western roads in the third quarter.

ORDERS PLACED

Baltimore & Ohio, 1000 all steel box cars, 500 each to Bethlehem Steel Co. and Standard Steel Car Co.

Central of New Jersey, 1000 box cars, 400 to Bethlehem Steel Co., 400 to Standard Steel Car Co. and 200 to American Car & Foundry Co.

Champlin Refining Co., Enid, Okla., five tank cars, to the Standard Tank Car Co.

Lehigh Valley, four gasoline-electric rail motor cars and six trailer cars, to the Standard Steel Car Co.; four gasoline-electric rail motor cars to the J. G. Brill Co.; and two gasoline-electric rail motor cars and seven trailer cars, to the American Car & Foundry Co.

Canadian National railways, 30 dump cars, to National Steel Car Corp.

Pennsylvania railroad, 24, 74-foot all steel dining cars, to its Altoona, Pa., shops.

Pennsylvania Terminal Coal Co., 800 mine cars, 600 to Irwin Mine Car Co. and 200 to Lorain Steel Car Co.

Rock Island, 200 underframes, to Bettendorf Co.

Tennessee Central railroad, 275 cars, 100 hopper cars, 100 gondolas, 50 stock and 25 flat cars, to Pressed Steel Car Co.

Western Maryland, 1800 gondolas being rebuilt into box cars, to own shops

Lackawanna, 900 box and hopper cars, 700 to American Car & Foundry Co. and 200 to Magor Car Corp.

LOCOMOTIVE ORDERS PLACED

Alton Southern, one switching engine, to American Locomotive Co.

Chicago, Indianapolis & Louisville, six locomotives, to American Locomotive Co.

Illinois Central, 50 freight locomotives, to Lima Locomotive Works, Inc. This is in addition to 20 passenger engines bought last week from American Locomotive Co.

Newburgh & South Shore, two switching engines, to Baldwin Locomotive Works.

Pennsylvania railroad, 60 six-wheel switching locomotives for general service, in addition to 200 recently placed for passenger service, to its Altoona, Pa. works.

ORDERS PENDING

United States Cast Iron Pipe & Foundry Co., 10 gondolas; bids asked.

Erie railroad, 15 passenger cars; contemplated.

LOCOMOTIVE ORDERS PENDING

Chicago, St. Paul, Minneapolis & Omaha, eight locomotives; bids asked.

Chicago, St. Paul, Minneapolis & Omaha, eight Mikado-type locomotives; bids asked.

Wire

Larger Buying Appears and Keeps Ahead of Last Year—Prices Firm

BETTER buying is evident in wire and nails and business this year is ahead of that in the same period last year. Manufacturing lines are slightly dull because of lack of demand for automotive purposes. While prices are firm in the main some shading is being done in competitive territory to hold business. Production is unchanged.

WIRE PRICES, PAGE 1512

Chicago, June 8.—Western railroads have been fair buyers of wire nails, barbed wire and woven fencing. Demand for jobbing lines of wire products continues to expand slightly but not all of the ground lost through bad weather this spring has been recovered. Specifications for manufacturing lines have been shrinking, due in large part to the automotive situation. For the year to date business in both lines is ahead of 1925. Makers say 2.55c, Chicago or western mill, for plain wire and 2.70c for wire nails are not remunerative prices but find it difficult to maintain them at times. Competition at Louisville and nearby points has developed shading.

Boston, June 8.—Nails after long dullness have reacted and sales of the past week are reported best in two months. The price is unchanged at 2.80c Worcester. Wire sales continue fair. One customer has increased shipments by 35 per cent this week.

Pittsburgh, June 8.—During the past week or so wire products specifications are larger and more numerous. The only deviation from the established bases, 2.50c on plain wire and 2.65c on wire nails, is in connection with the latter where some makers in southern Ohio on a more favorable freight rate basis are able to name lower delivered prices into certain territories on business which they particularly wish to retain. The last 500 rods of its stock of fencing has been shipped by the Youngstown Sheet & Tube Co., it having ceased the manufacture of fencing last March. Wire mill operations are maintained at about 50 per cent.

Nonferrous Metals

Market Tendencies Vary, Some Metals Firming Up and Others Easing Off—Brass and Copper Bookings Attractive

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Spot Straits Tin, N. Y.	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
June 2	13.82½	14.00	13.35	59.75	7.70	7.47½	6.95	27.00	10.30	35.00
June 3	13.82½	14.00	13.35	59.75	7.70	7.47½	7.00	27.00	10.62½	35.00
June 4	13.82½	14.00	13.32½	58.75	7.70	7.50	7.00	27.00	11.00	35.00
June 7	13.80	13.97½	13.32½	58.75	7.70	7.50	7.00	27.00	11.62½	35.00
June 8	13.80	13.97½	13.35	58.62½	7.70	7.47½	7.05	27.00	11.12½	35.00

NEW YORK, June 8.—Some nonferrous metals became firmer during the past week, others were unchanged to easy. Tin, as usual, was the most changeable, being alternately weak and firm but with the general trend decidedly downward. Zinc and antimony were definitely stronger than in some time.

A number of brass and copper rolling mills are entering the summer with larger business on their books than a year ago. Buying of products is quiet, but some large inquiries are pending, with the buyers holding off as long as possible in the hope that copper will slip a little farther. There is some falling off at this season as usual, yet in some instances, especially in certain products entirely of copper, mills are operating a little better than a few weeks ago. Some mills are requesting deliveries of copper a little earlier than originally specified. Prices of mill products in all metals are unchanged.

Copper—Metal sold at 13.82½c and 13.85c delivered, in the East, last week, but in the past few days more metal has become available at 13.80c and some has sold at this figure. Electrolytic sold at 14.00c delivered Mid West and held at that figure but it might have been possible to shade this price on lake copper in the past day or two. Buying of copper, when the end of any period is reached, is found to have run to a good total, but most of the time it drags along in such a fashion as to create the impression the market is easier than it really proves to be. Often some rather low prices appear but as real buying appears, it is interesting to see that frequently only a small amount of buying causes these prices to disappear. Not much business has been done in the export market in the past few weeks but lately there has been slightly larger buying. At 13.80c the market has sagged about 10 points since early May but it is a little higher than a year ago.

Zinc—Galvanizers have bought prime western a little more actively of late than they did in the spring, with the result that smelters have felt a little stronger and easily worked the price up to 7.00c East St. Louis, at which business was done on several days. On Monday there was a tendency among some smelters to go to 7.05c and today that level was considered the market. For several weeks the ore market held firm at $45 and then last Saturday went to $46 with sales a few thousand tons larger, over 12,000 tons. However, even this figure is light and less than output. Brass special is firmer, about 10 points premium, and high grade is steady at 8.25c, delivered East.

Tin—Consumers were more active in the plating metal a few days ago coming in mostly on a price-break after the statistics for May showed less stringency in supplies. This buying caused firmness, but the latter did not last long. Users of tin have bought mostly for comparatively early arrival while dealers have been buying futures. The premium of spot over futures has narrowed to a little more than 1 cent and delivery the current month now is less than 1 cent over future shipment from the Straits.

Lead—Buying in the Middle West has continued fair, while the market in the East has lacked snap. Prices on New York basis are mostly 7.65c but 10 points higher has been done, mostly for prompt and this position is not easy to get at the lower figure.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
High brass	18.87½
Copper, hot rolled	22.50
Zinc, (100-pound base)	11.25
Lead full sheets (cut ¼c more)	12.25 to 12.75
Aluminum, bright flat, up to 10 gage	37.50
SEAMLESS TUBES	
High brass	23.50
Copper	24.25
RODS	
High brass (round ⅝ to 2½-inch)	16.62½
Naval brass	19.37½
WIRE	
Copper, small lots	16.00
High brass	19.37½

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	8.75
Chicago	9.00
Cleveland	8.75 to 9.00
HEAVY YELLOW BRASS	
Chicago	7.50 to 7.75
Cleveland	7.00 to 7.25
ZINC	
New York	4.00
Cleveland	4.25 to 4.50
HEAVY COPPER AND WIRE	
New York	11.50
Chicago	10.50 to 11.00
Cleveland	10.50 to 10.75
RED BRASS BORINGS	
New York	8.25
YELLOW BRASS TUBING	
Cleveland	7.00 to 7.25
LIGHT COPPER	
New York	9.25
Chicago	9.25 to 9.50
Cleveland	9.25 to 9.50
LIGHT BRASS	
Chicago	7.00 to 7.25
Cleveland	6.00 to 6.25
ALUMINUM	
Clippings	20.00 to 21.00
Borings, Cleveland	12.00 to 13.00
Cast	17.00 to 18.00

Secondary Metals

Remelt aluminum No. 12	24.00 to 24.50
Brass ingot, 85-5-5-5	11.50 to 11.75

Coke By-Products

Distillates Firm—Sulphate Demand Dull, Prices Steady

New York, June 8.—Coal tar products are firm. Current requirements of distillates allow little surplus stocks. Prices of pure and 90 per cent benzols are holding at 25 cents, works, in tanks, and 30 cents in drums; solvent naphtha and toluol 35 cents in tanks and 40 cents in drums, and commercial xylol at 36 cents in tanks, and 41 cents in drums.

The sulphate of ammonia sellers report extreme dullness, with little indication of a revival before the end of this month, when fertilizer manufacturers may figure on requirements. Export inquiries and orders are negligible. Prices are nominally unchanged at the reduced levels established last week, material for export holding at $2.50 to $2.55, port, in double bags, and for domestic account at $2.50 to $2.55, delivered.

Naphthalene is dull. Prices are weak at 6½ to 7 cents works, for flakes and 7½ to 8 cents, for balls.

Coke Oven By-Products

Per Gallon at Producers' Plants in Tank Lots

	Spot	Contract
Pure benzol	$0.25	
90 per cent benzol	0.25	
Toluol	0.35	
Solvent naphtha	0.35	(nominal)
Commercial xylol	0.36	(nominal)
Phenol	0.22	0.22

Per Pound at Producers' Plants

Naphthalene flakes	0.06½ to 0.07
Naphthalene balls	0.07½ to 0.08

Per 100 Pounds Delivered

Sulphate of ammonia	2.52½	

Machinery

Business Appears Better After a Full Month of Inactivity—Further Isolated Price Increases Are Announced

INDICATIONS are that buying of machine tools and equipment is improving after a lull extending throughout the last month. Inquiries are a little better but there is still the disposition for some buyers to delay action on lists on which bids have been received. In the East, the coming machine tool exhibit at Atlantic City is held responsible for part of the delay. While the railroads have a good deal of equipment pending, little of it is being closed, thus the bulk of sales are from general industrial fields. Price increases still are noted, one planer builder in the Chicago district having announced a price raise of 10 to 15 per cent. High speed drilling machines in some instances are up 10 per cent and new lists are being issued for chucks.

New York, June 8.—Machine tool buying is fairly brisk, although there is a tendency in some quarters to await action until after the exhibit in Atlantic City. Current buyers include International Motors Co., which this week has closed on several machines for Plainfield, N. J. This company, however, has been buying consistently for some time. Otis Elevator Co. also continues to buy for Yonkers, N. Y., and now is commencing to inquire for equipment for its new addition at Harrison, N. J. Dominating all else at the moment, however, are the lists of the New York Rapid Transit Co., and the Atlantic Coast Line, both previously noted as involving numerous machines. It appears likely now that the latter list may be even heavier than indicated by last week's report. The General Electric Co., Schenectady, N. Y., is inquiring for several machines, including six milling machines.

Boston, June 8.—Tool buying in this district continues quiet. Prices on sensitive drilling machines and planers have been advanced on an average of 10 per cent. Boston & Albany railroad is buying against its list of 30 tools. General Electric Co. is in the market for multiple spindle drills and a miller for its Lynn, Mass., works, and three machines for its Pittsfield, Mass., plant.

Pittsburgh, June 8.—In the metalworking equipment field spasmodic buying takes place, mostly one or two tools at a time as needed. Action is expected to be taken shortly against the Johnstown, Pa., trade school list, and the only new list before the trade this week involves 25 or 30 woodworking machines for a furniture factory in this state. Foundry equipment has been fairly active.

Cincinnati, June R.—The machine tool industry in this district is quiet with recent sales and inquiry of small consequence. Users are buying on a hand-to-mouth basis and show no disposition to close rapidly on inquiries. Railroad buying is exceedingly low. Springfield Malleable Co., Springfield, O., is preparing a list of tools for outfitting its plant which was recently destroyed by fire. Builders of planers, lathes and milling machines appear to be getting the bulk of the current business. Dealers in used equipment report a fair run of orders.

Chicago, June 8.—With railroad buying opening up after a considerable lull, and industrial buying quiet, machine tool activity here is fairly well balanced. New inquiries are few and mostly for single items. In general, machinery houses report May about equal to March, the best month this year, and some 25 per cent better than April. Illinois Central has begun buying against its long list for Paducah, Ky., taking mostly heavier equipment at this time, such as forging machines, planers and boring mills. Chicago & North Western also is about to buy against a recent good list. Prices are firmer, with one planer interest increasing prices 10 to 15 per cent, the high speed drillmakers advancing lists about 10 per cent, and chuck makers issuing a new list. Deliveries are holding up well. Internationoal Harvester Co. is buying for its Rock Island and Fort Wayne plants.

Cleveland, June 8.—Sales in this territory are little better than during the past month. Inquiries are some better. Interest is attached to the announcement that General Motors Corp. will build a $5,000,000 plant at Pontiac, Mich. This estimate includes only the buildings to be built at once and the machinery to be installed. Eventually investments of over $15,000,000 will be made.

CRANE ORDERS PLACED

Five ballast cleaning locomotive cranes for Pennsylvania railroad, two going to Ohio Locomotive Crane Co. and three to McMyler-Interstate Co.

Four 2-ton electric sandslinger cranes for International Harvester Co., Rock Island, Ill., to H. D. Conkey Co. through Page & Ludwick.

Two locomotive cranes for Lackawanna railroad to Industrial Works.

Two cranes, including 6-ton handpower with runway and 6-ton special cantilever handpower crane for East Orange Water department, East Orange, N. J., to New Jersey Foundry & Machine Co.

Two cranes, including 160-ton wrecking crane and 25-ton locomotive magnet crane for Southern Pacific Co., San Francisco; builders not named.

Single Awards

Among single awards were: Ditcher for Chicago, Burlington & Quincy, to American Hoist & Derrick Co.; ditcher for Reading Co., this making four to have been placed recently, to American Hoist & Derrick Co.; 25-ton locomotive crane for Central Coal Co., New York, to Orton Crane & Shovel Co.; 10-ton locomotive crawler crane for American Radiator Co., Bayonne, N. J., to Link-Belt Co.; 15-ton electric crane for Joseph Hyman & Sons, Philadelphia, to Northern Engineering Works; 30-ton, 5-motor crane for Bromptonville Pulp & Paper Co., Bromptonville, Que., to Northern Crane Works Ltd., through R. D. S. Ferguson, New York; 3-ton handpower crane for Bergen-Hudson Iron & Steel Co., North Bergen, N. J., to Alfred Box & Co.; 5-ton handpower crane for power house in Middle West, awarded through General Engineering & Management Corp., New York, to New Jersey Foundry & Machine Co.; 20-ton handpower crane for Bayonne, N. J., plant of Standard Oil Co. of New Jersey; previously noted as placed, awarded to Chisholm-Moore Mfg. Co.; 30-ton locomotive traveling crane for Overland Construction Co., Chicago, to Industrial Works; 18-ton locomotive crane for Southern Wood Preserving Co., Chattanooga, Tenn., to Orton Crane & Shovel Co.; 12-ton locomotive crane, Burrell Engineering Co., Chicago, for Milwaukee use, to Orton Crane & Shovel Co.; 7-ton gasoline caterpillar crane for Leonard Paving Co., New York, to Orton Crane & Shovel Co.; 5-ton caterpillar crane for Kaiser Fuel Co., Detroit, to Orton Crane & Shovel Co.; 5-ton crane for American Hollow Boring Co., Erie, Pa., to Harnischfeger Corp.; 10-ton traveling crane for East Bay municipal utility district, Oakland, Calif., to Cyclops Iron Works.

CRANE ORDERS PENDING

Thirteen electric overhead cranes for Atlantic Coast Line shops near Tampa, Fla., including two 100-ton, two 15-ton, five 10-ton and four 3-ton, specifications issued through Dwight P. Robinson Co. Inc., New York. This list mentioned last week involved 14 cranes instead of 13.

Eleven cranes of 10 to 40-ton capacity for strip mill plant of Weirton Steel Co., Weirton, W. Va.; bids being taken.

Several cranes for Gardner Governor Co., Quincy, Ill.; bids asked.

Several cranes for International Harvester Co., Chicago; bids asked.

Conveying equipment for National Biscuit Co., New York, for installation at Chicago.

Two cranes including 40-ton locomotive crane and 8-wheel ditcher with ⅞-yard bucket for Southern Pacific Co., San Francisco; no action yet taken.

Among single inquiries are: 30-ton locomotive traveling crane for Illinois Central railroad, bids asked; 10-ton special crane for International Harvester Co., Chicago, bids asked; 2-ton crane for Lalance Equipment Co., Huntington, W. Va., bids being taken; trolley for American Sheet & Tin Plate Co., Dover works, Pittsburgh, bids being taken; 25-ton crane for foundry in Kiskiminetas valley-Blairsville, Pa., district, bids being taken; 15-ton crane for River-Rail Terminal Co., Cincinnati; bids asked.

Warehouse

Continued Good Demand Reported by Jobbers—Building Products Most Active—Prices Generally Firm

BUILDING products are in best demand from iron and steel warehouses. Jobbers report continued good business, tonnage increases being general. Prices generally are steady, failure to follow the recent recession in mill prices not causing another change to accommodate the higher levels.

Improvement in the Cleveland market is variable. One distributor is selling at the March-April rate, or above May. Generally business is better than May but slightly behind April. Prices are firm.

Philadelphia jobbers report May business nearly equaled April. June is starting at a good rate.

Although orders are not quite as numerous, they are larger, in the New York metropolitan district. The market is maintaining the brisk rate prevailing in May. The most active item appears to be structurals. One jobber asserts that more of this material is moving than at anytime in several weeks.

Buffalo warehouses report business getting back to normal after the Memorial Day holiday. June promises to hold the pace established by April and May.

Movement in the Cincinnati district is on the increase particularly in structurals, reinforcing bars and plates. The last product is in better demand than for several weeks. Sheets, cold-rolled products and wire goods continue to lag.

Pittsburgh warehouse men report a consistent demand and June so far is keeping up to the May rate. Prices are unchanged and if anything are steadier, not having participated in some of the fluctuations true of mill prices.

Structurals and bars are in best demand from warehouses in the Southwest. Prices in the Tulsa, Okla. district are steady.

Demand is well diversified in the Chicago market. Only wire products are slightly weak. More recent advances on the part of western mills have not affected general jobber prices. May closed well and June has opened on a good scale. Following a fairly successful May, Detroit warehouse operators report good new business. Some automobile manufacturers are beginning to slow down. Structurals are moving freely, while orders for bars and sheets are heavier.

Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.15c
Ft. Worth	3.90c
Los Angeles	3.20c
New York	3.24c
Philadelphia	3.00c to 3.20c
Pittsburgh	2.90c
Portland	3.00c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	4.06c

IRON BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
Ft. Worth	3.90c
New York	3.24c
Philadelphia	3.00c to 3.20c
St. Louis	3.15c
Tulsa	4.06c

REINFORCING BARS

Boston	3.265c to 3.50c
Buffalo	3.30c
Chicago, billet	2.60c
Chicago, rail steel	2.00c
Cincinnati	3.30c
Cleveland	2.60c to 3.00c
Detroit	3.15c
Ft. Worth	3.75c
Los Angeles, C.L.	3.05c
Los Angeles, L. C. L.	3.30c
New York	2.95c to 3.15c
Philadelphia	3.15c
Pittsburgh	2.50c to 2.60c
San Francisco, C. L.	3.35c
San Francisco, L. C. L.	3.80c
Seattle	3.25c
Tulsa	4.06c
Youngstown	2.50c to 2.60c

STANDARD STRUCTURAL SHAPES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.25c
Ft. Worth	4.50c
Los Angeles	3.20c
New York	3.34c
Philadelphia	2.70c to 3.00c
Pittsburgh	3.00c
Portland	3.10c
San Francisco	3.30c
Seattle	3.35c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	4.16c

PLATES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.00c
Cleveland, 3/16-inch	3.225c
Detroit	3.25c
Detroit, 3/16-inch	3.45c
Ft. Worth	4.50c
Los Angeles	3.20c
New York (sheared and universal)	3.34c
New York (floor)	5.25c
Philadelphia	2.75c to 3.00c
Philadelphia, 3/16-inch	2.85c to 3.15c
Pittsburgh	3.00c
Portland	3.25c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	4.16c

NO. 10 BLUE ANNEALED SHEETS

Boston 3/16-inch	3.915c
Buffalo	3.90c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.15c
Detroit	3.65c
Los Angeles	3.75c
New York	3.89c
Portland	4.25c
Philadelphia	3.50c
San Francisco	3.75c
Seattle	4.50c
St. Louis	3.60c
St. Paul	3.75c
Tulsa	4.56c

NO 28 BLACK SHEETS

Boston	5.25c
Buffalo	4.60c
Chicago	4.10c
Cincinnati	4.55c
Cleveland	3.85c
Detroit	4.25c
Ft. Worth	5.50c
Los Angeles	4.75c
New York	4.35c to 4.50c
Philadelphia	4.45c
Portland	5.25c
San Francisco	4.75c
Seattle	5.50c
St. Louis	4.60c
St. Paul	4.35c
Tulsa	5.16c

NO. 28 GALVANIZED SHEETS

Boston	6.25c
Buffalo	5.90c
Chicago	5.25c
Cincinnati	5.65c
Cleveland	5.00c
Detroit	5.50c
Ft. Worth	6.25c
Los Angeles (corr. 28 ga.)	6.00c
New York	5.35c to 5.50c
Philadelphia	5.65c
Portland	6.25c
San Francisco	6.00c
Seattle	6.50c
St. Louis	5.70c
St. Paul	5.60c
Tulsa	6.31c

BANDS

Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.80c
Ft. Worth	4.65c
Los Angeles	4.05c
New York	3.99c
Philadelphia	3.75c to 3.90c
Pittsburgh	3.60c
Portland	4.25c
San Francisco	4.15c
Seattle	4.25c
St. Paul	3.90c
Tulsa	4.71c

HOOPS

Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cleveland	3.65c
Detroit	4.30c
New York	4.49c
Philadelphia	4.00c to 4.25c
Pittsburgh	3.60c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds and hexagons	Flats and squares
Boston	4.05c	4.55c
Buffalo	3.90c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.90c	4.40c
Detroit	3.85c	4.35c
Los Angeles	5.25c*	.....
New York	4.00c	4.50c
Philadelphia	4.00c	4.50c
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....
Tulsa	4.66c	5.16c

*Rounds only.

COLD ROLLED STRIP

Boston, 0.100 inch, 500 lb. lots	6.15c
Buffalo	6.35c
Chicago	6.25c
Cincinnati	7.15c
Cleveland, over 500 lb. lots	5.95c
Detroit	6.20c
New York	6.25c
Philadelphia	6.25c
Pittsburgh	6.30c

FOREIGN IRON AND STEEL

New York duty paid

Swedish, hollow drill steel	15.00c
Swedish iron bars round	6.75c
Flats and squares	7.00c

WELDED PIPE

Discounts from warehouse, New York City Standard Steel Pipe

WROUGHT STEEL PIPE

	Black	Galvanized
⅛-inch butt	—28	+21
¼ to ⅜-inch butt	—36	— 3
½-inch butt	—46	—29
¾-inch butt	—51	—37
1 to 3-inch butt	—53	—39
2-inch lap	—40	—22
2½ to 6-inch lap	—48	—35
7 and 8-inch lap	—44	—17
9 and 10-inch lap	—38	—14
11 and 12-inch lap	—37	—12

WROUGHT IRON PIPE

	Black	Galvanized
¼ to ⅜-inch butt	+44%	+78%
½-inch butt	— 4	+19
¾-inch butt	—1	+ 9
1 to 1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
2½-inch lap	— 9	+ 6
3 to 6-inch lap	— 3	+ 6
7 to 12-inch lap	— 3	+16

Coast Trade Is Brisker

Structural Demand Accounts for Most Present Buying—
Railroad Needs Come Out

SAN FRANCISCO, June 5.—(*By Air Mail*)—Trading in Pacific Coast markets for iron and steel products during the past week has become a little more brisk and some rather heavy tonnages of structural shapes and plates have been placed. Among these were 3500 tons of plates and shapes for the Southern Pacific Equipment Co. and 800 tons for plates for a pipe line at La Mesa. The strike situation in San Francisco is still having a serious effect on the building industry and a good deal of work has been held up pending a settlement. Prices generally are by no means on a firm basis and in some lines it is rather easy to secure a price of $1 a ton under prevailing levels.

Pig Iron and Coke

Little of importance has transpired in the pig iron and coke market of late. Sales and inquiries have been confined to relatively small lots for prompt shipment and with hardly an exception have not involved over 100 tons. The Southern Pacific Co. has an inquiry out for 500 tons of coke. Prices on India iron have strengthened a little and the class of material is now being quoted at $25 c.i.f. Coast ports.

Coast Pig Iron Prices

Utah basic	$26.00 to 27.00
Utah foundry	26.00 to 27.00
*English (2.75 to 3.25 sil.)	25.00
*German	23.50
*Belgian	22.00
*Indian	25.00
*Dutch	22.00

*C.i.f. duty paid.

Bars, Plates and Shapes

Awards of reinforcing bars this week aggregated over 1800 tons and included 500 tons for hospital buildings at Mare Island navy yard, 325 tons for a plant at Auberry for the Southern California Edison Co. and 320 tons for foundations for the city hall, Los Angeles. Pending business is of fair proportions but most offerings involve 20 to 60 tons. Prices are on a firm basis both in the Los Angeles and San Francisco districts. Importers of foreign bars are actively seeking tonnages and recently some rather large lots have arrived in various Pacific coast ports.

Demand for plants has picked up and over 6000 tons are pending. Awards exceeded 2000 tons and included 800 tons for a pipe line at La Mesa, booked by the Lacy Mfg. Co. and 900 tons for a pipe line and siphon for the Nevada irrigation district, Grass Valley, and 300 tons for a pipe line at Roseville, Calif., both taken by the Western Pipe & Steel Co. Interest is centered on the inquiry of the Southern Pacific Co., San Francisco, for five new ferry boats calling for approximately 3000 tons of plates and shapes. Bids have been opened on 1500 tons for a pipe line at Tacoma and 1450 tons are involved in a pipe line for La Mesa, Calif., bids on which will be opened June 21. The general quotation on plates continues at 2.25c c.i.f. but quotations have been received by some consumers at 2.20c.

The Southern Pacific Equipment Co., San Francisco, this week placed the largest structural shape and plate award since the early part of the year. This material, for use in connection with its car building program, involved 3500 tons, of which eastern producers took 2334 tons and Pacific Coast mills 1166 tons. Awards totaled 4400 tons and included 325 tons for drum gates for the Pacific Gas & Electric Co., San Francisco, placed with Moore Drydock Co.. 260 tons for a roaster and treater for the American Smelting & Refining Co., San Francisco, booked by the Minneapolis Steel & Machinery Co. and 135 tons for a distributing station for the Pacific Gas & Electric Co. at Oakdale, Calif., awarded to the California Steel Co. Pending business is of heavy proportions and aggregates over 12,000 tons. Prices range from 2.30c to 2.35c c.i.f.

Other Finished Material

Cast iron pipe awards this week totaled over 800 tons, the United States Cast Iron Pipe & Foundry Co. taking 236 tons for the La Mesa irrigation district, La Mesa, Calif., and Fisher & McCall obtaining the general contract for 568 tons of 4 to 12-inch pipe for Chandler, Ariz. Pending business calls for over 1200 tons, new inquiries of the week involving 130 tons for Alhambra, Calif., and 103 tons for South Pasadena.

Demand for tubular goods is fairly well maintained. Movement of standard pipe is much more active than oil country goods. Los Angeles will open bids next week for 263 tons of joint pipe.

The Southern Pacific Co. has placed 4280 tons of 128-pound girder rails and 23,748 tons of 75, 90 and 110-pound T-rail with eastern producers. This company has also closed on its inquiry for 180 tons of rivets and has an inquiry out for about 100 tons of carriage and machine bolts. A San Francisco fabricator has an inquiry out for 230 tons of rivets.

Northwest Buys Little

SEATTLE, June 5.—Mill representatives state that iron and steel prices are holding firm notwithstanding reports from California that recent concessions have been made. There is no feature in this territory except that buyers are placing orders in small tonnages and are more interested in quick deliveries than in price reductions.

Bars, Plates and Shapes

Prices are unchanged, both eastern and local bars being quoted at 2.35c. The same price applies to structurals, while plates are unchanged at 2.30c. The market on bars and plates appears firm, although no great volume of new business is being booked. Plates are possibly slightly weak and on large contracts lower might be done. The local steel mill is on the same basis of operations, three furnaces. Business appears to be slacking off to some extent. Sales of bars are largely carload lots, no large tonnages being moved. One local interest had an inquiry for 150 tons of reinforcing material from the Hawaiian islands but the order has not yet been placed.

Considerable interest attaches to the opening of bids this week for the pipe line job at Tacoma involving nearly 1500 tons of plates. This is the only large inquiry here for plates.

Several small local contracts for structurals which were to have been awarded during the week are still pending. These include 326 tons for a telephone building addition, 213 tons for a new bank building and 35 tons for the H. C. Henry art gallery at the state university. The largest bridge project pending involves 660 tons of steel for the Clarks Fork highway structure, Bonner county, bids June 12.

Finished Materials

Jobbers find business less active. May was slightly below April. There is no change in warehouse prices. Business is generally in small lots and there is no feature to the wholesale trade. Building materials continue in best demand. Wholesale prices are unchanged.

Old Materials

Cast iron scrap is moving slowly with demand inactive and prices varying. A fair average level is $16.50 gross. Steel scrap is steady and unchanged at $10.50 and $11 gross, the prices quoted by the main buying interest. Japanese buyers are indicating $12 f.o.b. dock but report difficulty in obtaining the material their principals demand.

District representatives of the Republic Iron & Steel Co. attended the annual sales conference at Youngstown, O., Monday and Tuesday. Following the final session, the various representatives were tendered a banquet.

Electric Engineers

Of Iron and Steel Industry Open Convention and Exposition

Chicago, June 8.—Safety engineers, combustion engineers and electrical engineers, manufacturers and others interested in the progress of electrical developments within the iron and steel industry gathered at the Hotel Sherman here today for the twenty-second annual convention of the Association of Iron and Steel Electrical Engineers. President George H. Schaeffer, electrical engineer, Carpenter Steel Co., Reading, Pa., opened the business session in the morning, which was followed by a general luncheon of all delegates.

At the technical session in the afternoon under the auspices of the safety division, C. L. Baker, Bethlehem Steel Co., Johnstown, Pa., presided over the discussion of rules for safe operation of electric overhead traveling cranes. Among the speakers were the following: Dr. W. D. Fisk, chief surgeon, International Harvester Co., Chicago; Charles B. Scott, president, National Safety council; A. C. Cummins, electrical engineer, Carnegie Steel Co., Duquesne, Pa., John A. Oartel, chief safety director, Carnegie Steel Co., Pittsburgh, and Walter Greenwood, safety engineer, Carnegie Steel Co., Youngstown, O. A compilation of general rules for elimination of crane accidents was presented to the assembly for approval.

New Company Awarded Furnace Contract

The International Furnace Co., Keenan building, Pittsburgh, affiliated with the Ofenbaugesellschaft, m.b.H., Dusseldorf, Germany, which has just received its papers of incorporation in Pennsylvania, has been awarded a contract for five recuperative type heating furnaces by the Youngstown Sheet & Tube Co. The furnaces are for use in connection with the new seamless tube mill which it is understood will produce tubes direct from cast ingots.

Officers of the International Furnace Co. are Heinrich Bangert, Dusseldorf, president; George J. Hagan, Pittsburgh, general manager; R. W. Dermel, Pittsburgh, treasurer and P. F. Hermann, Pittsburgh, secretary.

Bethlehem Sells Issue

Directors of the Bethlehem Steel Corp. have approved of the sale of a new issue of $10,000,000 of its secured serial 5 per cent gold notes to the Guaranty Trust Co., the Bankers Trust Co., the National City Co., the Chase Securities Corp. and J. & W. Seligman Co., all of New York. The purpose of the issue is to provide in part for the retirement of approximately $11,000,000 of 15-year 7 per cent marine equipment trust certificates and approximately $1,000,000 equipment trust 7 per cent gold certificates. By this financing the company will further reduce its funded debt, which already has been cut down by $22,500,000 since Jan. 1, 1925.

Shape Awards Numerous

(*Concluded from Page* 1521)

Electric Co., Oakdale, Calif., to California Steel Co.

100 tons, grade school, West Homestead, Pa., to the Homestead Iron Works, through the Hodder Construction Co.

100 tons, bridge for the New York Central railroad at Dobb's Ferry, N. Y., to the Jones & Laughlin Steel Corp.

100 tons, cathedral school of Holy Cross, Boston, to A. O. Wilson Structural Co.

CONTRACTS PENDING

10,000 to 15,000 tons, prospective requirements for main viaduct of Union terminals project, Cleveland; plans expected out within 30 days.

7500 tons, highway bridges at Weirton, W. Va. and Gallipolis, O.; now up for bids.

4500 tons, miscellaneous bridge work for the Southern railroad; pending.

4000 tons, Midland club, Chicago; K. M. Vitzthum & Co., 307 North Michigan avenue, Chicago, architects.

3000 to 4000 tons, miscellaneous bridgework for Pennsylvania railroad; pending.

3000 tons, section 6 E-2, route 8, subway, Borough of Queens, New York; general contractors' bids close June 11.

2000 tons, buildings for the Viscos Co., Nitro, W. Va.; general contract awarded the Rust Engineering Co., Pittsburgh; bids on steel in.

1500 to 2000 tons, municipal high bridge for Harlem river, New York; new specifications expected out in about one month.

1200 tons, Orpheum theater, Seattle; bids to be taken soon.

1200 tons, Hotel Montgomery, Youngstown, O.; bids close June 30.

1000 tons, Famous Players theater, Seattle; bids coming up soon.

1000 tons, Mid-Hudson bridge at Poughkeepsie, N. Y.; Blakeslee Rollins Corp., Boston, awarded general contract.

700 tons, office building, Jacksonville, Fla.; pending.

700 tons, cement plant, New Orleans; bids asked.

660 tons, Clarks Fork highway bridge, Bonner county, Wash.; bids in June 12.

600 tons, power house for the Ohio River Edison Co., Toronto, O.; bids asked.

600 tons, highway bridge, Camden, N. J.; pending.

560 tons, garage for Boston Elevated, Somerville, Mass.; bids in.

500 tons, (estimated) for office building No. 2 West Virginia State capitol, Charleston, W. Va.; bids close July 12.

500 tons, Clairton, Pa., high school addition; bids close June 21.

500 tons, Caesar theater, West Forty-fourth street, New York; bids asked.

400 tons, Y. M. C. A. building, Northside, Pittsburgh; general contract awarded Pittsburgh Engineering Works, Pittsburgh; bids on steel in.

400 tons, apartment, Chestnut and Larkin streets, San Francisco; bids being received.

Pig Iron Is More Active

(*Concluded from Page* 1513)

other Cleveland furnace is out of the market, blowing out one of its two local furnaces this week until August. The Cleveland price has eased off 25 cents to $19.25, furnace, for delivery in the 50-cent switching area. The American Brake Shoe & Foundry Co. is inquiring for 8000 tons for Pittsburgh and Cleveland. The American Radiator Co. has purchased some iron for its southern and western plants. Certain merchant furnace interests are refusing to go below $18.50, valley.

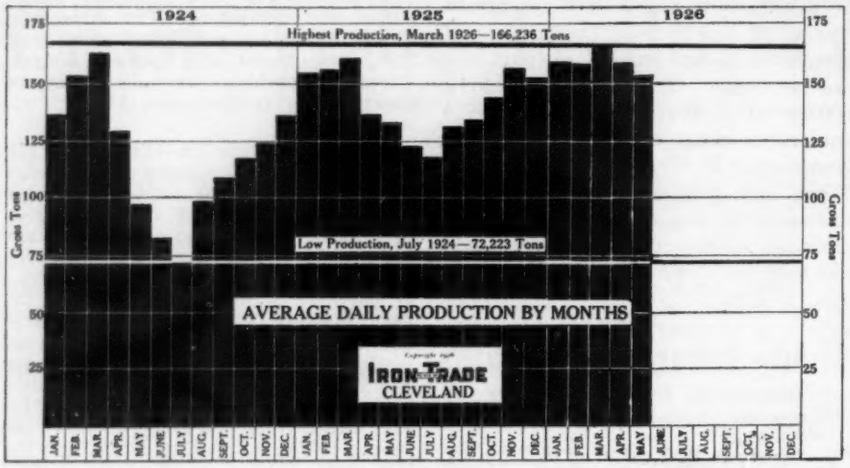
Cincinnati, June 8.—Sales of pig iron and inquiry are more active. Sales during the past week totaled over 5000 tons. The Richmond Malleable Co., Richmond, Ind., purchased 2000 tons for last half. The American Foundry Co., Hamilton, O., bought 1000 tons of northern foundry from a lake furnace interest, while the International Harvester Co., closed for 750 tons of malleable for Springfield, O. Inquiry pending involves approximately 10,000 tons. The Standard Sanitary Mfg. Co. wants 7000 tons of northern or southern for Louisville, Ky., for the last half, while the Bertsch & Co., Cambridge City, Ind., is inquiring for 200 to 400 tons of northern (silicon 1.75 to 2.25). The International Harvester Co. is negotiating for 400 tons of northern foundry for Richmond, Ind. Northern iron is quoted $19 to $19.50, Ironton, while southern iron ranges from $21.50 to $22, Birmingham.

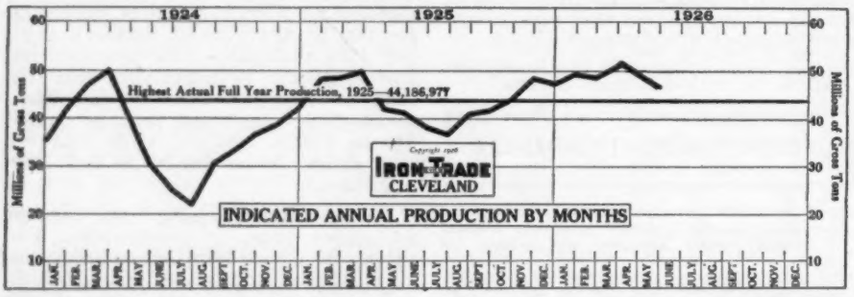
Chicago, June 8.—Pig iron displays an easier tone, in consumption and price. Moderate contraction in foundry operations continues. Foundries on railroad work feel the lack of car buying by western roads but have hopes of improvement next quarter. Approach of the July 1 inventory period for some tractor and implement makers has tempered their buying of castings. The market on No. 2 foundry and malleable iron ranges from $21 to $21.50, Chicago furnace. Most melters continue to place their June needs only. Third quarter coverage is regulated largely by price. Though a third quarter buying movement is not under way, inquiry is expanding. It is reported Chicago sellers have taken a fair tonnage in western Michigan and northern Indiana, meeting competiton from lake furnaces. Chicago iron has been forced westward by the condition of the eastern markets. Low phosphorus is quoted at $30.50 to $31, delivered, but is not strong.

St. Louis, June 8.—Since Decoration day there has been a slight revival of interest among pig iron users in this district. Sales approximate 6200 tons. About 40 per cent of the iron is for prompt shipment. The largest single sale was 3500 tons to an equipment manufacturer for delivery through the balance of the year. An inquiry from a Kansas melter for 1000 tons is pending. Shipments on old contracts continue high, although the melt continues to decrease.

Birmingham, Ala., June 8.—Birmingham pig iron has been reduced $1 a ton to $21, base, furnace, for third quarter, while the former price of $22 is applying on sales to the end of June. No reduction in output in the near future is indicated, and it is estimated that as much iron will be required in this district during the third quarter as for the second. All local melters are operating at 60 to 100 per cent.

Ingot Output Continues Drop





PRODUCTION of steel ingots in May continued the decline started last month, bringing the rate of output down to the lowest rate in seven months, or since last October. However, the May scale of operations was the highest for any May except 1923. According to statistics compiled by the American Iron and Steel institute from figures supplied by companies which in 1925 made 94.5 per cent of the country's total, production in May amounted to 3,945,336 gross tons. As compared with the 4,123,941 tons made in April, this was a loss of 178,605 tons. May and April both had 26 working days.

Average daily production of ingots in May was 151,744 tons, this being a drop of 6869 tons per day, or 4.3 per cent from the 158,613-ton daily rate of the previous month. This was the lowest monthly rate since last October when production was 144,030 tons per day. Nevertheless, it was the highest May in history except 1923 when the output was 156,161 tons per day.

On the basis of 151,744 tons per day in May and 311 working days in the year, the indicated annual rate of production was 47,190,000 tons. The indicated rate for April was 49,330,000 tons, operations in May represented 84.27 per cent, against 88.09 per cent in the previous month.

tons. Based upon the country's theoretical capacity of 56,000,000 gross

Steel Ingot Production—1925-26

94.5 Per Cent of Industry Reporting

Gross Tons

1925	Open-hearth	Bessemer	All other	Monthly output companies reporting	Calculated monthly output all companies	No. of working days	Approximate daily output all companies	Change in daily rate per cent
Jan.	3,263,256	689,996	11,960	3,965,212	4,193,281	27	155,307	+13.1
Feb.	2,933,225	602,042	12,998	3,548,265	3,752,352	24	156,348	+ 0.6
Mar.	3,337,721	614,860	13,633	3,966,214	4,194,340	26	161,321	+ 3.1
Apr.	2,858,866	515,715	14,182	3,388,763	3,583,676	26	137,834	—14.5
May	2,755,561	497,708	13,790	3,267,059	3,454,971	26	132,883	— 3.6
5 mos.	15,148,629	2,920,321	66,563	18,135,513	19,178,620	129	148,671	
June	2,540,729	476,945	12,490	3,030,164	3,204,451	26	123,248	— 7.2
July	2,446,068	457,095	13,547	2,916,710	3,084,472	26	118,634	— 3.7
Aug.	2,698,285	523,734	12,914	3,234,933	3,420,998	26	131,577	+10.9
Sept.	2,738,673	547,121	13,977	3,299,771	3,489,565	26	134,214	+ 2.0
Oct.	3,077,114	584,567	15,624	3,677,305	3,888,814	27	144,030	+ 7.3
Nov.	3,092,194	581,347	17,085	3,690,626	3,902,900	25	156,116	+ 8.4
Dec.	3,169,796	569,304	15,843	3,754,943	3,970,918	26	152,728	— 2.1
Total	34,911,488	6,660,434	168,043	41,739,965	44,140,738	311	141,932	
1926								
Jan.	3,326,846	581,683	13,664	3,922,193	4,150,469*	26	159,633*	+ 4.5
Feb.	3,023,829	556,031	12,818	3,592,678	3,801,776*	24	158,407*	— 0.8
Mar.	3,590,791	635,680	15,031	4,241,502	4,488,362*	27	166,236*	+ 4.9
Apr.	3,282,435	601,037	13,652	3,897,124	4,123,941	26	158,613	— 4.5
May	3,201,330	516,676	10,437	3,728,443	3,945,336	26	151,744	— 4.3
5 mos.	16,425,251	2,891,107	65,602	19,381,940	20,509,884	129	158,991	

Seek Further Information on German Bounties

Washington, June 8.—Officials of the customs service, treasury department, are hopeful that they will have complete information before June 20 when the countervailing duty is effective against German pig iron and steel products. There has been some misunderstanding in connection with this matter.

One of the particular points of controversy is the question as to whether or not pig iron is receiving a bounty in Germany; also, rumors have reached Washington to the effect that the Germans are claiming that this bounty does not apply to the raw product but only applies to the iron and steel as used in a finished product.

The information received here indicates that this bounty is changed from month to month by a German export committee which is composed of five producers of iron and steel products and five consumers. At this time the customs service officials have not decided whether or not they will announce the extra amount of duty which will have to be paid when the commodities are imported into the United States.

Other information received here is that importers are claiming the foreign office of the German government states that extra duty would not apply on steel bars and structural shapes. This is not in accord with information in the hands of the different government departments here.

Cincinnati Iron Molders Strike for $8

Cincinnati, June 8.—Approximately 250 members of the iron molders union Local No. 4, are striking for an increase from $7 to $8 a day. Brass molders who belong to the same local have been granted the increase. In the negotiations between the iron molders and employers the latter agreed to pay them $7.50 pending a settlement. The strike does not affect stove molders who are not members of local No. 4.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

COLORADO FUEL & IRON CO., Pueblo, Colo., which recently put into operation two mechanically operated gas producers manufactured and installed by the Wellman-Seaver-Morgan Co., Cleveland, has placed an order for 16 additional producers, duplicates of the first two. They will be placed at its Minnequa works at Pueblo.

* * *

LUDLUM STEEL CO., Watervliet, N. Y., has added two inter-department tractors to its fleet, giving an unusually large equipment of this nature.

* * *

TIMKEN ROLLER BEARING CO., Canton, O., has had plans made for expansion of its plant, $1,500,000 being appropriated for the purpose. The added units are to be in operation by the end of the year. Laboratory and research facilities are included in the enlargements.

* * *

CARR FASTENER CO., Cambridge, Mass., has disposed of its interests in the automobile and commercial car field and will devote its efforts to development of its lubricator in industrial applications. The intention is to surround the lubricator with other equipment to offer more complete lubricator service.

* * *

GRAVER CORP., East Chicago, Ind., has sold three cracking process units, the White Eagle Oil & Refining Co., Kansas City, Mo., buying a 1000-barrel unit for its Casper, Wyo., plant, the Peerless Oil & Refining Co., Chanute, Kans., one of similar size, its second, and the Kanotex Refining Co., Arkansas City, Kans., its second unit.

* * *

WALDO, EGBERT & McCLAIN, Buffalo, N. Y., dealers in pig iron, coke, coal, alloys, steel and fluorspar, has made a change in its organization, electing George A. Maltby director, vice president and stockholder. Mr. Maltby was associated for 17 years with the M. A. Hanna Co. at Detroit, Toronto and Buffalo, being resident agent for Eastern territory in the latter location. Directors of the company are J. H. Bradley, president of the Pratt & Letchworth Co.; Justus Egbert, vice president and treasurer; George A. Maltby, vice president; Fred J. Waldo president, and Ward A. Wickwire.

* * *

DETROIT PURCHASING AGENTS ASSOCIATION has elected H. J. Koehn of Gregory, Mayer & Thom, president; G. I. Berridge, of Parke, Davis & Co., first vice president; R. W. Green of the Champion Porcelain Co., second vice president; L. W. Brice of the Continental Motors Corp., treasurer. L. G. Auberlin continues as executive secretary.

* * *

AGNEW ELECTRIC WELDER CO. INC., Milford, Mich., manufacturer of electrical welding machinery, has been incorporated recently and plans to extend its business and add seam welders and hydraulic butt welders to its line. A. M. Deslaurier, Detroit, has been elected president of the corporation, W. Rivard, Detroit, secretary and treasurer, and R. F. Agnew, Milford, Mich., vice president.

* * *

FREDERICK B. STEVENS LTD., has been established with main office and warehouse at 139 Royce street, Toronto, Canada. This company will handle and service the entire Stevens line of foundry facings and supplies, platers equipment and also will represent the Quigley Co. of Canada in Ontario for sale and service of its acid-proof cement and other products.

* * *

THE Pittsburgh Screw & Bolt Co. has booked an order for 12 carloads of rods, bolts and nuts from the McLean Contracting Co., Baltimore, for Pier 80 South Wharves, Delaware river, to be built for the department of wharves, docks and ferries, Philadelphia. The McLean Contracting Co. also has placed about two carloads of dock spikes with W. Ames & Co., Jersey City, for the same job.

* * *

WESTINGHOUSE ELECTRIC & MFG. CO. has taken orders recently for control equipment for seven automatic substations for operation of coal mines. Two have been sold to the Lehigh Valley Coal Co., one each to the Harlem Collieries Co., West End Coal Co., Youghiogheny & Ohio Coal Co., Vesta Coal Co. and West Kentucky Coal Co. The Youghiogheny & Ohio Coal Co. has ordered automatic control for an air shaft substation.

* * *

TAUNTON-NEW BEDFORD COPPER CO., Taunton, Mass., founded in 1826, is celebrating the completion of 100 years in continuous operation as a nonferrous rolling mill. The company has just appointed the John H. Heimbucher Metals Co., 514 North Third street, St. Louis, sales representative for the middle west. A full assortment of sheet, roll and strip copper will be carried. O. B. Suck is vice president and general manager of the St. Louis agency.

* * *

EXPORT MANAGERS CLUB OF NEW YORK has elected the following: President, W. R. Cummings, Monroe Calculating Machine Co.; first vice president, E. B. Filsinger, Lawrence & Co.; second vice president, D. W. Fernhout, International Manning Abrasive Co.; secretary, Oren O. Gallup, of the Ohlen, Bastrop Co.; treasurer, C. E. Thomas, United States Steel Products Co. A. M. Hamilton, American Locomotive Sales Co., and M. C. Simmons, Scranton Lace Co., were elected directors.

* * *

STALNAKER STEEL CO., Pittsburgh, has opened an office at San Diego, Calif., in the Union building. The Pittsburgh office of the company will be moved to 345 Fifth avenue and the New York office will be located at 109 Broad street, in charge of Walter L. Ripperger. The three Stalnaker brothers, H. G., J. B. and H. D., have moved to San Diego. The latter will spend about half his time in the East, overseeing offices there. The company will confine its operations to a conservative few customers and not attempt a miscellaneous scrap trade.

* * *

OFFICERS of the Schenectady chapter of the American Society for Steel Treating for 1826-27 recently were elected as follows: Chairman, C. K. Getchell, engineer in charge of standard practice, American Locomotive Co.; vice chairman, Dr. S. L. Hoyt, research metallurgist, General Electric Co.; and secretary-treasurer, James Taylor, metallographist, American Locomotive Co.

North Carolina Presents Growing Market for Steel

A Survey from "the Queen City of the South"

By E. C. Kreutzberg

CHARLOTTE, N. C., June 8.—"Queen City of the South" is what Charlotte calls herself. Rapidly multiplying skyscrapers attest to her progress. Here and throughout this territory new industrial establishments are springing up. Aside from good train service, there focuses here a network of the fine concrete roads for which North Carolina in recent years has become renowned. Charlotte is the capital of an industrial center which is making rapid strides.

In no way can the situation here be more clearly gaged than by the extent to which there is competition for the building steel business of this territory. Charlotte still is a port of call for the traveling representatives of the steel mills. However, a number of structural fabricating and erecting companies have found the field so good that they either have opened branch offices here or have representatives who are permanently located here. Practically every one of the important concrete reinforcing bar distributors has a representative here.

To show the kind of business that is done in this territory, here are some of the recent lettings in reinforcing bars: The American Hardware & Equipment Co. of Charlotte just booked 150 tons for a new power plant at Duke university at Durham; O. Z. Wrenn & Co., Charlotte, have booked 150 tons for water works at Monroe; the Southern General Fireproof Co., through its Charlotte office has booked 170 tons for a building for the *Charlotte Observer*. To show how large the jobs are occasionally, the Southern Engineering Co. now is shipping on an order for about 700 tons for the new building of the First National bank, Charlotte. Work pending includes about 300 tons for a hydroelectric plant at Norwood, N. C., and 125 tons for a school at High Point, near here. Some 400 to 500 tons of bars will be required for road work for which the state highway commission opened bids on May 4.

Here are some of the structural tonnages recently placed: The Southern Engineering Co., Charlotte, booked 200 tons for a building for the Boger-Crawford Spinning Mills at Lincolnton, N. C. and 115 tons for a building for the Tomlinson Chair Co. at High Point. It also booked 100 tons for coal conveying equipment to be installed by the Link-Belt Co. for the Southern Power Co. at Spencer, N. C. The T. L. Talbert Iron & Steel Co. has placed 160 tons with the Belmont Iron Works for a cotton mill at China Grove, N. C.

Requirements for the state highway system comprise the most important single steel consumption in this territory. Included in these needs are concrete reinforcing bars, steel for bridges and steel for all kinds of traffic markers and signaling devices. Next come the requirements of the building industry here. They include the material going into all kinds of office and public structures, power plants and textile plants. The Southern Power Co., the chief factor in hydroelectric and steam power plant construction in this territory, has its headquarters here and buys its steel through the Mill Power Supply Co., Charlotte. There are the usual miscellaneous uses for bars in this territory. Large tonnages of sheets are used for roofing. The textile mills buy a good deal of box strapping.

Pittsburgh Base Dominates

The Pittsburgh base continues the dominating factor in setting steel prices here, even though the carload freight rate on steel to Charlotte is 51 cents a ton from Pittsburgh and 31 cents from Birmingham. The Birmingham and other southern steelmakers equalize with Pittsburgh in shipping into this territory. For instance the usual price on bars from Birmingham is 2.10c, base Birmingham. This means 2.41c delivered at Charlotte, and, in turn, 1.90c, base Pittsburgh. This 2.10c Birmingham price may be shaded if the business is sufficiently attractive. Prices usually quoted on plates and shapes are based on 1.90c, base, f.o.b. Pittsburgh. On commercial bars, plates and shapes out of warehouse here, prices to some extent depend on competition from Baltimore. Prices on stock material at Charlotte range from 3.25c to 3.50c base. The warehouses make an additional charge of $1.50 per ton for local delivery. The warehouse market on concrete reinforcing bars may be quoted at 3.25c to 3.50c, although the situation in this commodity is firmer than it was and the usual quotation is 3.50c.

At Greensboro, 94 miles from Charlotte, there are two jobbers who carry substantial stocks of steel. Their principal customers are the cottonseed oil mills, the furniture plants and the textile plants. Greensboro also is of growing importance as a consumer of steel for building purposes, orders generally being placed direct with the mills. A feature of the business there is the virtual disappearance of the country blacksmith, who still holds sway in South Carolina. This is because automobiles have supplanted horse-drawn vehicles in North Carolina, a process that has been hastened by road building. A jobber in Greensboro who used to do a large business in carriage hardware and associated goods, finds that this business has dwindled almost to nothing.

At Greensboro, steel prices are based on Pittsburgh and most of the steel is obtained from Pittsburgh or the East. The freight from Pittsburgh to Greensboro in carloads is 48 cents per 100 pounds, while that from Birmingham is 38½ cents. When the Birmingham mills sell to Greensboro they equalize with the Pittsburgh price and if they are in need of business, they may cut the price $1 a ton. Warehouse prices on bars, plates and shapes at Greensboro are 3.35c base, plus delivery charges. The warehouse market on concrete bars at Greensboro is 3.25c base.

Two features of the hardware situation at Greensboro are interesting. Large houses there which supplied the territory for miles around have found growing competition from the modern hardware stores which have sprung from the old general stores. These modern stores are to be found in the rapidly growing small towns located along the hard roads of the state. The other feature is the extent to which hardware jobbers at Pittsburgh, Baltimore, Philadelphia, Cleveland and other northern cities canvass the retail trade there. Competition has pared down the margins and in many instances has involved business transacted at a loss.

British Pig Iron Is Disappearing

Coal Strike Still Cramping the Industry—More Steel Being Imported From Continent —Domestic Mills Take Orders for 13,000 Tons of Rails, 4400 Pairs of Car Wheels—Are Fairly Active, Their Stocks Firm

European Headquarters,
IRON TRADE REVIEW,
2-3 Caxton House, Westminster, S. W.1

LONDON, June 8.—(*By Radio*)—Leaders of the striking coal miners have not changed their attitude, and the strike continues to exert a paralyzing influence, principally on blast furnaces and the large sheet mills. Tin plate mill operations are restricted to finishing departments. Coke and pig iron stocks are disappearing. Exports of pig iron from the Middlesbrough district in May totaled 33,429 tons, which compares favorably with shipments in April.

The British steel mills are fairly active, and their shares in the stock market are firm. One railroad has ordered 13,000 tons of rails and 4400 pairs of car wheels and axles. Indian railroads also are buying material. An order for 1200 tons of plates and bridgework has been lost by British makers to continental mills. Building operations are absorbing a large tonnage of steel, part of which is coming from the Continent. Billets made on the Continent are offered to British buyers at £5 5s ($25.56) delivered, against the domestic price of £6 ($29.22) and beams at £5 18s ($28.74) against £7 2s 6d ($34.70).

A report from Brussels states that fewer export sales are being made to American buyers, but there is a good trade with South America and the Far East. French steel exports are active. German prices are easier.

Fuel Lack Nearly Stops British Steelmaking

Office of IRON TRADE REVIEW,
Prince's Chambers, Corporation St.

Sterling—$4.86

BIRMINGHAM, Eng., May 28.—The growing feeling of bitterness in industrial circles, in striking contrast with the good humor prevailing during the general strike, is probably most intense in the iron and steel trades, which are gradually feeling the worst effects of fuel scarcity. From now onward losses will assume tragic proportions. The stoppage of blast furnaces is nearly complete. Five are working in Scotland, two in Middlesbrough and one or two in South Wales. The Scotch furnaces continued longest, being not altogether dependent upon coke, and having at disposal fairly large accumulations of a class of coal serving as a good substitute for coke in pig iron production. The furnaces in the Barrow area stopped almost immediately on the closing of the pits.

That district happens to hold the largest stock of pig iron and is not only supplying the moderate demands of its customers, but, so far, in contrast to other districts, has made no addition to its prices. Stocks are low in Middlesbrough and No. 3 G.M.B. has been increased to £3 12s 6d ($17.61) east coast hematite being rather dearer at £3 17s ($18.71). This brand of steelmaking iron has been produced in excess of demand for some time, a fact which no doubt accounts for the moderate advance.

Midland pig irons are generally 5s ($1.21) dearer. Nearly all the miscellaneous foundries of the Midlands are still operating but the overcautious buying of the past few months has brought its penalty in an almost immediate shortage, numerous ironfounders scrambling for supplies from the moderate stocks held at furnaces. Northampton No. 3 foundry is £3 12s 6d ($17.61) and Derbyshire brands proportionately dearer. Coke supplies are dwindling, and fancy prices are being paid for brands on which preferential reliance is placed by users. It is difficult to say what is the mar-

Current Iron and Steel Prices of Europe

Dollars at Rates of Exchange, June 7	*British* Gross Tons U. K. Ports		*French* Metric Tons Channe lPorts		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable	£ s d		£ s d		£ s d		£ s d	
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$17.65	3 12 6*	$16.31	3 7 0	$16.31	3 7 0	$17.53	3 12 0
Basic	17.65	3 12 6	16.92	3 9 6	16.92	3 9 6	17.05	3 10 0
Basic-bessemer	19.11	3 18 6†	14.61	3 0 0	14.61	3 0 0	18.26	3 15 0
Hematite, Phosphorus 0.02-0.05	19.97	4 2 0	18.66	620*	.....	.....	20.80	4 5 0
SEMIFINISHED STEEL								
Billets	$27.29	5 12 6	$20.45	4 4 0	$20.45	4 4 0	$20.94	4 6 0
Wire rods	43.83	9 0 0	26.79	5 10 0	26.79	5 10 0	27.37	5 12 0
FINISHED STEEL								
Standard rails	$35.31	7 5 0	$29.22	6 0 0	$29.22	6 0 0	$29.22	6 0 0
Merchant bars	1.49c	6 17 6	1.05c	4 15 0	1.05c	4 15 0	1.08c	4 18 0
Structural shapes	1.38c	6 7 6	1.02c	4 13 0	1.02c	4 13 0	1.07c	4 17 0
Plates, ship, bridge and tank	1.41c	6 10 0	1.12c	5 2 0	1.12c	5 2 0	1.18c	5 7 0
Sheets, black, 24 gage	2.23c	10 5 0	1.45c	6 12 0	1.45c	6 12 0	2.32c	11 0 0
Sheets, galvanized, 24 gage, corrugated	3.48c	16 0 0	2.94c	2,100*	3.36c	2,400*	3.63c	16 10 0
Bands and strips	2.17c	10 0 0	1.40c	1,000*	1.37c	6 4 6	1.49c	6 15 0
Plain wire, base	2.12c	9 15 0	1.79c	1,280*	1.61c	1,150*	1.51c	6 17 0
Galvanized wire, base	2.77c	12 15 0	2.38c	1,700*	1.96c	1,400*	1.98c	9 0 0
Wire nails, base	2.07c	9 10 0	2.10c	1,500*	1.68c	1,200*	1.76c	8 0 0
Tin plate, base box 108 pounds	$ 4.99	1 0 6	.....	....	....	...	$ 6.57	1 7 0
*Francs								
Domestic Prices at Works or Furnace—Last Reported			Francs		Francs		Marks	
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$17.65	3 12 6	$12.64	420(2)	$13.97	455	$19.55	85
Basic pig iron	17.17	3 10 6	12.34	410(1)	13.66	445	20.24	88
Furnace coke	4.26	0 17 6	5.09	169	4.76	155	4.95	21.50
Billets	27.93	5 12 6	18.66	620	20.26	660	27.37	119
Standard rails	1.63c	7 10 0	1.01c	720	1.00c	670	1.46c	140
Merchant bars	1.58c	7 5 0	1.10c	785	1.00c	645	1.46c	140
Shapes	1.49c	6 17 6	1.00c	715	1.00c	625	1.42c	136
Plates, ship, bridge and tank	1.55c	7 2 6	1.16c	825	1.00c	670	1.60c	153
Sheets, black, 24 gage	2.28c	10 10 0	2.07c	1,475	1.65c	1,175	2.19c	210
Sheets, galvanized 24 gage, corrugated	3.42c	15 15 0	2.87c	2,050	3.40c	2,425	3.96c	380
Plain wire	2.12c	9 15 0	1.68c	1,200	1.61c	1,150	1.88c	180
Bands and Strips	2.28c	10 10 0	1.27c	910	1.19c	850	1.67c	160

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £1 2s 0d ($5.36) f. o. b. Ferromanganese £14 10s 0d ($70.62) f. o. b. German ferromanganese £12 0s 0d ($58.44) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semifinished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

ket value of the small tonnage of coke available.

Further shrinkage of pig iron exports is shown by April figures, shipments being 30,486 tons against 46,059 in March. This is mainly due to the comparatively high price of British material in competition with continental, artificially depreciated by the slump in the franc. Similarly, imports of foreign basic pig iron increased in the same period from 17,912 tons to 21,217 tons. Imports of pig iron are likely to increase as the strike continues, as founders can keep in operation only by using these irons. Up to the present, they are utilized on the coast, railway costs making them prohibitive in the Midlands; but the continuance of the strike will make price considerations relatively unimportant.

Steelworks have not suffered quite so speedily as blast furnaces in the coal stoppage. Many steelworks utilizing producer gas ,and therefore using fuel economically, are able for a short time to use steel, and in other cases there are accumulations of ingots which can be rolled where electric driving is possible. There are still three steel furnaces producing in South Wales, but of course, this cannot long continue.

The proportion of mills still at work makes a fairly large aggregate and is one of the noticeable differences contrasting this coal stoppage with its predecessors. This is no doubt, the sequel to the modernization of plant, and the much larger use now made of electric driving and heating. Works producing special steels in Sheffield can still use their electric furnaces. Hadfields, after a week's stoppage for the holidays, made full resumption, and several large foundries have found it necessary to reduce output to only a moderate extent. A large proportion of the works have mills in operation, a typical example being the Sheffield Forge & Rolling Mills which has three mills running out of eighteen. The hoop mills at Barrow are also at work, and in the Midlands, increasingly devoted to rerolling, probably a score of mills are at work dealing with skelp, angles, sections and small products generally.

A remarkable feature is the steadiness of steel prices. Here and there an opportunist attempt is made to increase prices by 5s ($1.21) to 10s ($2.43) per ton. But prices are steady, as a rule, strictly on the prestrike basis. Makers are chary of offending customers by taking advantage of their necessity. The deficient railway service is almost as serious for the steel-using industry as the stoppage of numerous works. Constructional engineers and others find it difficult to get deliveries, and one large firm of constructors in Birmingham, pressing for consignments of steel from Middlesbrough, was put off with the explanation that the cranes are not available, the necessary electrical energy being impossible without the blast furnace gases relied upon for its generation.

French Steel Market Unsettled

Office of IRON TRADE REVIEW,
23 Rue de la Bienfaisance

PARIS, May 27.—(*European Staff Service*)—To understand the situation of French industry one must first study conditions prevailing in other European countries. Several of France's allies are in difficulty and the general unsettled condition of Europe undoubtedly is one of the causes of the unprecedented fall in French exchange. Ministerial crises in Poland and Belgium have been disturbing factors. It is noted that French, Italian and Belgian exchanges moved downward simultaneously. Moreover, the fall of the cabinet in Germany and a continuance of labor troubles in England have added to the general depression.

From the above one is inclined to think that the reaction on French industry would be most unfavorable. This would probably be true were it not for the fact that the fall of the franc has given rise to a great buying movement. Prices are rising, but advances have not kept pace with the decline in exchange. Efforts are being made by large manufacturers to prevent speculation. Furnaces and mills are, however, taking care of old customers. Delivery promises average from three to four months.

Phosphorus pig iron, Lorraine No. 3 foundry, is quoted at 420 francs ($12.60) per metric ton f.o.b. furnace. This price will be increased by 30 francs ($0.90) June 1. Hematite prices are being adjusted upward in keeping with the rising cost of fuel and labor.

Semifinished steel makers are heavily committed. Buyers are experiencing difficulty in obtaining requirements. Marine and Homecourt have, however, re-entered the market and are offering basic bessemer billets at 620 francs ($18.60) base f.o.b. mill. Open-hearth steel takes an extra of 10 francs ($0.30) per ton.

Manufacturers of structural shapes

Franc—$0.03

are classifying their product into three categories; less than 80 millimeters, 80 to 160 millimeters, more than 160 millimeters. The first is sold on the merchant bar basis; the second is quoted at 690 francs ($20.70), or 70 francs ($2.10) per metric ton under the present bar price; the third, comprising heavy shapes, ranges from 630 francs to 660 francs ($18.90 to $19.80) per metric ton. This classification has been made to assist manufacturers of heavy shapes to compete on work where contractors figure on reinforced concrete construction. The popularity of reinforced concrete has caused many large shape mills to lie idle, but an effort is being made to overcome this condition. Plate prices have not flolowed the upward trend of other products. Eastern mills are quoting 740 francs ($22.20) base per metric ton f.o.b. mill.

Merchant bars for export are being quoted as low as £4 15s ($23) f.o.b. Antwerp. Mills are booked ahead two or three months. Suspension of orders for English destinations has helped improve domestic deliveries. Concrete bars for domestic consumption are quoted at 850 francs ($25.50) f.o.b. mill Eastern France. Prices of various finished products have increased from 10 to 12 per cent during the past fortnight.

German Exports Best in Five Years

Berlin, May 25.—(*European Staff Service*)—Germany's exports of iron and steel products during March were 466,364 metric tons compared with 376,553 tons in February, 391,172 tons in January and 328,015 tons in March 1925. Shipments in March were the highest recorded in any month during the past five years. Among the principal items exported in March were 99,077 tons of bars and bands, 55,886 tons of rails and track fastenings, 44,590 tons of scrap, 42,560 tons of rolled and drawn wire, 39,291 tons of plates and sheets, and 33,015 tons of pig iron.

Imports in March were 69,375 metric tons compared with 69,331 tons in February, 67,597 tons in January and 99,396 tons in March 1925. Among the principal items were 22,135 tons of bars and bands, 13,317 tons of blooms, billets and sheet bars and 7211 tons of pig iron.

French Ore Production Makes Record

Paris, May 25.—(*European Staff Service*)—During March the extraction of iron ore from French mines exceeded all previous records, the output being 3,331,272 metric tons, compared with 3,018,235 tons in February and 3,129,843 tons, the previous highest mark, reached in December 1925. Stocks at French mines at the end of March totaled 2,471,699 metric tons, against 2,575,108 tons at the end of February. It will be noted that iron ore production from French mines is running parallel with the increasing production of pig iron, which also reached its maximum point during March. The following table gives figures for the first quarter of this year compared with the monthly averages of the three preceding years, in metric tons:

Monthly average	Production	Stocks at end of month
1923	1,935,460	.....
1924	2,416,020	.....
1925	3,048,185	.....
1926		
January	3,138,525	2,564,924
February	3,018,235	2,575,108
March	3,331,272	2,471,699

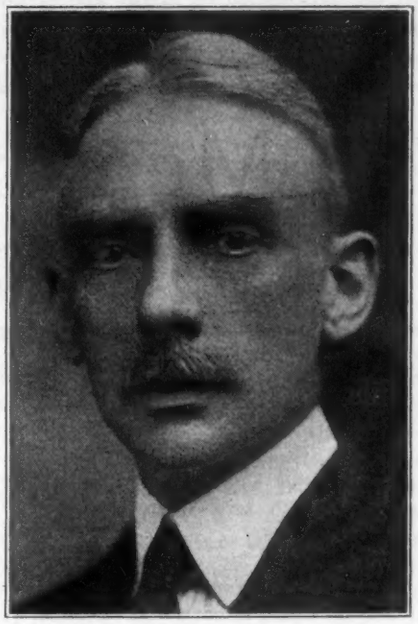
Industrial Men in the Day's News

Charles O. Hadly, New Vice President Alan Wood Iron & Steel Co.

ADVANCEMENT of the sheet steel industry and development of new uses for that product have resulted, in no small measure, from his activity.

STARTING as an office boy in 1882 for W. D. Wood & Co., his business career of 44 years has been identified with the manufacture and distribution of sheets.

A WIDE traveler in keeping himself informed in his business, he maintains an active interest in his church and other organizations. On vacations, he usually fishes in Canada.



WHEREVER new uses of steel sheets or distribution problems connected with the sheet industry are discussed, the opinions of Charles O. Hadly always are listened to with careful attention. For many years Mr. Hadly has been recognized as one of the clear thinkers in the industry. He has had a prominent part in encouraging the development of many new lines of consumption which today yearly absorb big tonnages of sheets. He has been a leader in the promotion of classification work which has been of benefit both to consumers and producers.

Now rounding out 44 years of continuous activity in the sheet business, Mr. Hadly is one of the veterans of the industry. Born in 1867 at Allegheny, now Northside, Pittsburgh, he went to work for W. D. Wood & Co. in 1882 as office boy. That company had its headquarters at 111 Water street, Pittsburgh, which also served as headquarters for another company owned by the Woods, the Wellsville Plate & Sheet Iron Co. These companies were leaders in the sheet industry of those days. Their plants were located, respectively, at McKeesport, Pa., and Wellsville, O. Young Hadly's first job was to answer the telephone. In those days a single instrument served the entire organization. It hung on the wall. When it rang, he would answer it and then whoever was wanted he would call to the phone.

In the meantime he prepared himself for increased responsibilities and shortly he was elevated to the position of stenographer. As a result of his work as stenographer, young Hadly became familiar with the products and general scope of the business of both companies. He soon became correspondent replying to letters of different kinds, principally in connection with sales. In this capacity he was assistant to Alan W. Wood, secretary and treasurer of the two companies, who had charge of sales.

In 1890 W. D. Wood & Co. became known as the W. Dewees Wood Co. and its headquarters were moved to McKeesport. Mr. Hadly went along and was purchasing agent from 1890 to 1892. This experience gave him a fine knowledge and appreciation of problems which was to prove of great benefit to him in later years. At that time he served also as secretary of another Wood interest, the Versailles Fuel Gas Co., which had natural gas wells and pipe lines and marketed gas to the city of McKeesport and to various large plate glass and steel manufacturing companies.

In 1892, Mr. Hadly was switched back into the sales department, having charge of the sale of specialties made by the Wood companies. These included refined black sheets, patent planished sheet iron and a large number of other special finished and blued products. When the Wood interests were bought out by the organizers of the American Sheet Steel Co., in 1900, Mr. Hadly was stationed at New York where he had charge of the sale of the products made by the McKeesport and Wellsville plants. In 1904 he resigned and spent a year traveling in the West and in Alaska. The next year he went with the Alan Wood Iron & Steel Co., Philadelphia, as assistant to the late Jonathan R. Jones, who then was vice president in charge of sales. Later Mr. Hadly was appointed general manager of sales. On April 28, this year he was elected vice president in charge of sales.

Mr. Hadly was one of the most active figures identified with the sheet industry's war service. He was a member

of the American Iron and Steel institute's subcommittee on sheet steel. This subcommittee handled allocations of sheets and served in various ways in connection with the sheet distribution.

Mr. Hadly is a member of the executive committees of the National Association of Sheet and Tin Plate Manufacturers, and of the Sheet Steel Trade Extension committee. He is a member of the American Iron and Steel institute. Important contributions have been made by him at their meetings in the form of papers dealing with sheet and billet classification problems. He consistently has advocated standardization of extras and of nomenclature as a means of encouraging market stability, in the interest not only of sheet producers but of the many manufacturers of sheet steel products.

Mr. Hadly resides at Berwyn, Pa., where he has a country place of 4½ acres. He is interested actively in church work, and is a trustee of the Methodist Episcopal church at Wayne, Pa. He is a member of the St. Davids Golf club, but only plays occasionally. The Art club, the Penn Athletic club, and the Steel Club of Philadelphia, all of that city, are other organizations in which he has membership. To keep informed on the problems of steel consumers Mr. Hadly travels to all parts of the country. He likes fishing and usually spends his vacations in Canada pursuing this sport.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

GEORGE R. HANKS, formerly superintendent and later assistant to the president of the Taylor-Wharton Iron & Steel Co., High Bridge, N. J., has been elected vice president to succeed the late Victor Angerer who died May 5.

* * *

R. L. Batteiger has resigned from Agnew Batteiger & Co., Philadelphia, to assume charge of the scrap department of Hickman Williams & Co., that city.

* * *

C. B. Auel, has been elected president of the Pennsylvania Society of Safety Engineers at its meeting in Harrisburg, Pa., May 28. John A. Oartel of the Carnegie Steel Co., Pittsburgh, retiring president of the society, was elected director.

* * *

Edward V. Peters has resigned as general sales manager of the New Jersey Zinc Co., New York, effective July 1.

A. P. Cobb, vice president, will take over those duties. He will be assisted by J. H. Janeway, assistant to the vice president.

* * *

James A. Lupfer, formerly works manager of the Snow-Holly works at Buffalo of the Worthington Pump & Machinery Corp., New York, has been appointed technical advisor to the vice president and will hereafter be located at the New York headquarters.

* * *

E. B. Greene, executive vice president of the Cleveland Trust Co., Cleveland, has resigned and has become chairman of its executive committee. He was elected a director also. Mr. Greene is an officer or director in many corporations including the Trumbull Steel Co., Cleveland Cliffs Iron Co., Eaton Axle & Spring Co. and others.

* * *

L. Gerald Firth, formerly works manager of the Firth-Sterling Steel Co., McKeesport, Pa., was appointed general manager of the company, at the board of directors meeting June 4.

R. S. Stevick, previously assistant to Mr. Firth has been appointed works manager, to succeed him.

* * *

R. F. Shaw, sales representative of the Kearney & Trecker Corp., Milwaukee, builder of milling machines, who has been representing the company in Grand Rapids, Mich., has been transferred to Chicago. He will continue in charge of the western Michigan territory and will take in addition part of Chicago and northern Illinois.

* * *

George A. Maltby, for the past 17 years associated with M. A. Hanna Co. in Detroit and Toronto and more recently in Buffalo and eastern territory in the sale of pig iron, has been elected director and vice president of Waldo, Egbert & McClain, Inc., Buffalo, pig iron, coke, coal, alloy and steel interest. Mr. Maltby has had a wide experience in the sale of pig iron.

* * *

Roscoe Seybold, formerly manager of price statistics of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has been appointed assistant to F. A. Merrick, vice president and general manager of the company. Mr. Seybold, a graduate of Purdue university, entered the college apprentice course at East Pittsburgh in 1907. At its completion he was placed in the the price department and later was transferred to the sales department.

* * *

William P. Chandler Jr. has resigned as special engineer for the Carnegie Steel Co., Pittsburgh, to take charge effective July 1, of the open-hearth department of the American Heat Economy Bureau, Inc., that city. Mr. Chandler received his engineering training at Cornell university, Ithaca, N. Y., and entered the Clairton plant of the Carnegie Steel Co. in 1910. In 1917 he resigned to become steam engineer for the American Heat organization in charge of combustion problems for the Cleveland Furnace Co. In 1918 he became assistant fuel and experimental engineer of the Duquesne works, Carnegie Steel Co., being appointed special engineer in charge of fuel and combustion problems in 1924.

* * *

Cummings C. Chesney who was elected president of the American Institute of Electrical Engineers at the annual meeting recently is manager and chief engineer of the General Electric Co. works at Pittsfield, Mass. He was born Oct. 28, 1863 and was graduated from Pennsylvania State college in 1885. After teaching for three years he associated with William Stanley's laboratory at Great Barrington, Mass., and was an incorporator of Stanley Electric Mfg. Co., Pittsfield, Mass. From 1904 to 1906 he was vice president and chief engineer of that company, becoming chief engineer and manager of the

General Electric Co. works which acquired the Stanley company. He is a member of various scientific organizations and was awarded in 1921 the Edison medal "for early developments in alternating current transmission."

* * *

A. G. Ripberger has been appointed chief engineer of the United Alloy Steel Corp., Canton, O., covering all divisions. He had been assistant general superintendent of operations.

* * *

F. F. Harter has been appointed branch manager at Philadelphia for the Crucible Steel Co. of America, New York. His headquarters will be at 1224 Callowhill street, Philadelphia.

* * *

Loring G. Calkins, vice president of Waldo, Egbert & McClain, Inc., Buffalo, pig iron, coke, alloy and other interests, and manager of the New England territory, has resigned effective July 1 to become associated with Stone & Webster, Inc., Boston, engineers and builders.

* * *

James M. Woods has just been appointed fuel sales manager of the new United Fuel & Supply Co. Detroit. Mr. Woods comes to his new position from the Semet-Solvay Co. where he has been acting as assistant to the sales manager for 15 years.

J. L. Newbold, of the fuel sales department, will be an associate of Mr. Woods.

* * *

A. J. Heysel has removed to Australia to take charge of the new malleable foundry of Edward Weir Ltd., Marrickville, N. S. W., Australia. For the past three years Mr. Heysel has been superintendent of the Jefferson Union Co., Inc., Lockport, N. Y. Previously Mr. Heysel was connected with Pratt & Letchworth Co., Buffalo, for five years.

* * *

Maj. Robert Bernard Jennings has been appointed general manager with headquarters at Montreal, of the Robert W. Hunt Co., Ltd., engineers. He was educated at Humberside Collegiate institute, Toronto, and has been connected with the Canadian Northern Ontario railway as resident engineer, and with the Canadian National railways as division engineer. Major Jennings is a member of the Engineering Institute of Canada and the American Railway Engineering association.

* * *

C. E. Bales has resigned as assistant manager of the Louisville Fire Brick Works, Louisville, Ky., effective May 31 to become production manager of the Ironton Fire Brick Co., Ironton, O. Mr. Bales has been active in the firebrick industry in the past few years and is a member of the refractories committee, American Foundrymen's association, and of the research advisory committee, American Refractories institute. He was chairman of the refractories division, American Ceramic society last year and is a member of the committee on tests and specifications of the joint committee to study foundry refractories.

* * *

John L. Bender, for a number of years representative at Detroit for the Pollak Steel Co., Cincinnati, will also represent the Standard Forgings Corp. of Delaware, which recently acquired the South Chicago works of the Pollak company.

* * *

John Boyd has resigned as manager of the Geo. W. Grimes Co., foundry and machine shop operator at Bluffton, Ind., and will leave for Santa Fe, N. M., where he will reside on a ranch bought recently. Mr. Boyd will be succeeded by E. Cottingham.

* * *

Francis Hodgkinson has been appointed consulting mechanical engineer for the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. For many years he was chief engineer of the South Philadelphia works. He will act as consulting engineer in all activities of that works. In April, 1925 Mr. Hodgkinson received the Elliot Cresson gold medal from the Franklin institute in recognition for his work in development of the steam turbine. He was born in England and educated at the Royal Naval school, New Cross, London. He joined the Westinghouse company in 1896.

A. D. Hunt has been appointed manager of engineering at the South Philadelphia works, following the discontinuance of the position of chief engineer.

Freight Car Repairs Up

Washington, June 8.—Freight cars in need of repair on May 15 totaled 162,822 or 7 per cent of the number on line, according to reports by the American Railway association.

This was an increase of 2977 over the number reported on May 1 at which time there were 159,845 or 6.9 per cent. It was a decrease of 30,213 cars compared with the same date last year.

Freight cars in need of heavy repair on May 15 totaled 120,413 or 5.2 per cent, an increase of 2704 compared with May 1. Freight cars in need of light repair totaled 42,409 or 1.8 per cent, an increase of 273 compared with May 1.

French Mills Will Have Sole American Agent

B. Nicoll & Co., 294 Madison avenue, New York, representatives of the Pont-a-Mousson pipe works, France, have been appointed sole American agents for De Windel & Cie, France, and the Societi Generale pour le Commerce Produits Industriels, Luxemburg, for the sale of steel. The two groups are among the largest producers in France, having a combined annual capacity of approximately 3,000,000 tons of finished iron and steel and employing 60,000 men. The plants consist of more than 12 rolling mills and a number of blast furnaces and open-hearth furnaces located in France, Luxemburg and the Saar valley. At present, the companies are working on new rolls of standard American specifications.

Among the principal products of these groups to be handled by the B. Nicoll company are structural shapes, plain bars and deformed concrete bars, hoops and bands, checkered floor plates and rectangular and universal plates, black, blue annealed and single pass cold rolled sheets, and American standard sections of light and heavy rails.

Appointment of one company to handle sales in this country is a marked departure from the previous policy of selling through various channels. The change is regarded as a recognition of the Nicoll company's vigorous efforts in the disposal of French pipe in this country. In addition to the New York offices, B. Nicoll & Co. have offices in San Francisco and Los Angeles, and are opening a branch in Galveston, Tex.

Navy Takes Plate Bids

Washington, June 8.—The bureau of supplies and accounts of the navy department received bids June 4 for 519 tons of black, medium steel plate, at various weights per square foot for blister shell and floor plates for the NEW YORK, for delivery at the Norfolk navy yard.

The bids follow: Bethlehem Steel Corp., $25,082.56; Carnegie Steel Co., $25,257.36; Joseph T. Ryerson & Son, $24,732.96; Worth Steel Co., $25,842.41 and $26,282.17; Alan Wood Iron & Steel Co., on 225 tons $10,589.56; John T. Hill, at 2.38c per pound, and extras not figured in bid.

Southern Iron & Machine Co., San Banito, Tex., has increased capital from $20,000 to $30,000.

Current Statistics of Industry

Steel Castings Bookings Take Sudden Drop

Washington, June 8.—Steel castings bookings in April totaled 85,990 tons, the lowest since November, according to reports by 107 companies to the department of commerce. The drop was entirely in railway specialties, miscellaneous castings showing a gain over March. April production totaled 105,188 tons or 80 per cent of capacity, compared with 108,348 tons or 83 per cent in March. Further comparisons of bookings and production follow:

BOOKINGS

Monthly average	Total net tons	Per cent capacity	Railway specialties net tons	Miscellaneous net tons
1913	57,184	67	27,600	29,584
1914	43,602	51	21,142	22,460
1915	64,252	72	29,966	34,286
1916	101,015	107	54,645	46,370
1917	88,394	88	34,529	53,865
1918	109,374	105	48,124	61,450
1919	44,120	41	13,692	30,428
1920	78,597	68	33,080	45,517
1921	29,707	26	12,210	17,497
1922	77,167	67	38,890	38,277
1923	88,790	75	40,318	48,472
1924	77,764	64	39,961	37,803
1925	75,041	60	31,386	43,655
April	74,541	59	29,861	44,680
Total 4 mos.	325,295	65	144,687	180,608
May	63,827	51	22,817	41,010
June	62,700	50	23,301	39,399
July	67,881	54	26,387	41,494
August	63,606	51	23,130	40,476
September	59,326	47	20,738	38,588
October	74,283	59	26,434	47,849
November	83,197	66	38,485	44,712
December	100,377	80	50,654	49,723
Total	900,492	60	376,633	523,859
1926				
January	106,186	81	51,557	54,629
February	93,364	71	41,236	52,128
March	*104,950	80	44,507	60,443
April	85,990	65	23,564	62,426
Total (4 mos.)	390,490	74	160,864	229,626

PRODUCTION

1926				
January	92,047	70	37,321	54,726
February	90,917	69	41,191	49,726
March	*108,348	83	46,628	61,720
April	105,188	80	35,381	69,807
Total (4 mos.)	396,500	76	160,521	235,979

*Revised.

Barrel Orders Decrease

Washington, June 8.—Production of steel barrels in April totaled 602,058 compared with 622,949 in March and 594,971 in April, 1925, according to reports from 31 manufacturers to the department of commerce. Shipments totaled 608,056, a drop from 622,312, and stocks at the end of the month 44,411 compared with 50,409. According to reports of the Steel Barrel Manufacturers institute, Cleveland, 23.8 per cent of I. C. C. barrel capacity was employed in April, 60.6 per cent of light barrel and 53.4 per cent of all barrel capacity. The volume of business in April was valued at $1,449,991.67 according to the barrel institute. Unfilled orders at the first of the month reported by the members of the institute totaled 923,561. Following are commerce comparisons:

	Production	Shipments	Unfilled orders for delivery within 30 days	Unfilled orders for delivery beyond 30 days
1925				
March	505,429	510,928	399,940	864,920
April	594,971	605,424	411,053	726,499
May	570,962	569,670	313,123	637,230
June	514,913	508,880	269,964	582,630
July	497,152	506,894	314,727	974,656
August	498,449	495,736	263,588	851,079
September	510,869	503,221	237,580	774,996
October	553,545	555,981	356,626	534,278
November	498,929	498,070	251,567	996,978
December	467,485	474,742	368,286	1,377,060
1926				
January	468,722	469,432	431,772	1,334,074
February	522,486	518,104	543,381	1,153,947
March	622,949	622,312	369,576	1,275,490
April	602,058	608,056	414,367	864,792

Automobile Production Heavier in April

Washington, June 8.—Production of motor vehicles in April totaled 402,574 passenger cars and 53,268 trucks, or a slight gain over March and the largest since September, according to reports to the department of commerce from returns by 172 manufacturers. Of the passenger car total, 382,631 were made in the United States and 19,043 in Canada. Of trucks, 2996 were built in Canada and 50,272 in the United States. Further comparisons of automobile production by months follow:

Passenger Cars

Totals for United States and Canada

	1923	1924	1925	1926
Jan.	228,860	293,822	213,851	284,153
Feb.	260,320	343,444	253,955	335,639
March	427,038	357,006	334,214	399,376
April	351,622	346,355	393,262	402,574
May	358,646	286,266	384,548	
June	343,985	225,034	366,510	
July	303,497	244,503	360,124	
Aug.	318,848	255,193	223,517	
Sept.	302,340	263,468	274,227	
Oct.	338,469	260,845	408,017	
Nov.	288,810	204,316	337,435	
Dec.	279,862	182,028	286,141	
Totals	3,702,391	3,262,764	3,835,801	1,421,742

Trucks

Totals for United States and Canada

	1923	1924	1925	1926
Jan.	20,506	30,627	28,202	32,735
Feb.	23,283	32,756	34,481	40,878
March	36,619	36,270	45,179	48,705
April	39,641	37,766	47,983	53,268
May	45,677	35,112	45,718	
June	42,453	28,884	38,150	
July	31,703	26,227	41,870	
Aug.	32,195	28,503	37,849	
Sept.	29,626	31,829	60,482	
Oct.	31,515	32,332	46,012	
Nov.	29,166	27,766	46,048	
Dec.	28,862	27,324	34,487	
Total	391,246	375,426	500,461	175,586

Foundry Equipment Sales Decrease in April

Cleveland, June 8.—Sales and shipments of foundry equipment in April dropped from March levels, according to reports of 11 members to the Foundry Equipment Manufacturers' association, Cleveland. April sales represent a gain of 19 per cent over that month of 1925 but a drop of 10 per cent from March 1926. April shipments show a gain of 22 per cent over April 1925 and a loss of 22 per cent from March 1926. Orders on hand May 1 were valued at $506,214 compared with $504,671 April 1, or a gain of 0.03 per cent. Further comparisons of shipments, orders and unfilled orders on hand follow:

1925	Sales	Shipments	Unfilled orders
January	$ 304,724	$ 305,580	$ 431,656
February	326,887	277,855	421,918
March	469,324	348,589	446,895
April	345,907	325,951	539,539
May	332,175	407,339	539,232
June	334,424	318,442	463,431
July	353,560	352,602	460,383
August	580,864	388,370	457,925
September	296,437	351,121	598,143
October	424,054	400,646	544,041
November	480,327	414,148	518,794
December	416,610	472,144	593,455
Total	$4,665,300	$4,362,794	
1926			
January	$ 414,121	$ 445,377	$ 550,016
February	472,814	422,004	501,793
March	483,010	525,655	536,978
April	434,626	402,494	504,671
May			506,214

Consumption of Babbitt Metal Declines

Washington, June 8.—Total apparent consumption of babbitt metal in April totaled 5,229,199 pounds compared with 5,860,543 pounds in March and 5,126,416 pounds in April, 1925, 27 manufacturers reported to the department of commerce. Sales by manufacturers decreased but consumption by producers gained. Further comparisons of consumption follow:

1925	Total apparent consumption	Sales by manufacturers	Consumption by producers
April	5,126,416	3,928,136	1,198,280
Total (4 mos.)	21,618,506	17,048,192	4,570,314
May	5,081,668	4,189,558	892,110
June	5,074,966	4,085,125	898,841
July	5,184,196	3,694,386	1,489,810
August	5,441,823	4,068,706	1,373,117
September	4,621,033	3,579,780	1,041,253
October	5,550,247	4,169,870	1,380,377
November	4,954,683	3,534,026	1,420,657
December	4,878,806	3,910,160	968,646
Totals	62,405,928	48,279,803	14,126,125
1926			
January	5,152,694	3,708,383	1,444,311
February	5,139,952	3,867,710	1,272,242

March	5,860,453	4,852,805	1,007,738
April	5,229,199	3,817,253	1,411,946
Total (4 mos.)	21,382,388	16,246,151	5,136,237

Steel Furniture Sales Continue To Gain

Washington, June 8.—Orders for steel furniture in April were valued at $2,356,403 compared with $2,289,-276, according to reports of 32 companies in the business group to the department of commerce. Shelving manufacturers report sales valued at $704,432 in April, the largest since October. Shipments of furniture in the business group dropped in April as did unfilled orders. Orders for the first four months of 1926 are $1,400,-058 more than for the same months of 1925. Further comparisons follow:

BUSINESS GROUP

1925	Orders received	Shipments	Unfilled Orders
April	$1,964,959	$2,009,199	$1,466,428
Total (4 mos.)	$8,170,384	$7,948,296	$5,906,637
May	1,855,552	1,918,869	1,383,424
June	1,792,656	1,805,599	1,390,540
July	1,823,435	1,810,754	1,445,897
August	1,664,649	1,688,965	1,358,386
September	1,969,769	1,816,484	1,535,231
October	2,170,076	2,130,498	1,406,117
November	1,975,117	1,885,505	1,496,242
December	2,454,277	2,418,577	1,531,505
1926			
January	2,652,208	2,434,205	1,760,573
February	2,272,555	2,183,948	1,833,862
March	2,289,276	2,387,886	1,718,189
April	2,356,403	2,323,447	1,576,103
Total (4 mos.)	$9,570,442	$9,329,436	$6,888,727

SHELVING

1925			
April	$566,834	$650,769	$436,048
Total (4 mos.)	$2,234,751	$2,151,618	$1,766,108
May	523,426	549,272	372,296
June	501,182	514,117	360,089
July	510,815	482,187	398,973
August	516,694	452,716	447,255
September	624,676	542,173	511,689
October	730,911	622,471	626,933
November	686,814	574,905	739,831
December	620,947	788,461	570,941
1926			
January	582,016	578,161	584,824
February	656,367	603,501	633,935
March	583,701	726,413	604,991
April	704,432	699,370	570,693
Total (4 mos.)	$2,526,516	$2,607,445	$2,394,443

Industrial Engines Drop

Washington, June 8.—Shipments of mining and industrial locomotives in the first quarter of 1926 totaled 184, valued at $830,927, compared with 244 for the last quarter of 1925, valued at $1,245,527, according to reports to the department of commerce by 10 companies. Of the first quarter shipments, 127 were mining trolley type, 38 mining storage battery type, 4 trolley-type industrial and 15 storage battery-type industrial locomotives. In March 20 steam locomotives, 121 gasoline and 12 electric locomotives were exported. Canada took 12 steam and 54 gasoline locomotives that month.

Canadian Output Gains

Toronto, Ont., June 8.—Pig iron produced in Canada during April totaled 67,607 gross tons, making an increase of 14,356 tons or 27 per cent over the March output of 53,251 tons. For the four months ending April, the cumulative production was 227,248 tons, as compared with 181,805 tons for the corresponding period of 1925. Reflecting the higher output of pig iron, the production of steel ingots and castings advanced to 79,936 tons, registering a gain of 21,171 tons or 36 per cent over the 58,765 tons of March. Production for the first four months of the year showed little change, being 260,394 tons for 1926 as against 260,-307 tons for the corresponding period of 1925.

Ship Contracts Fewer

Washington, June 8.—American shipyards were building or had under contract to build for private shipowners on May 1 a total of 196 steel vessels, of 213,046 gross tons, compared with 213 steel vessels, of 213,052 gross tons ,on April 1, it is reported by the bureau of navigation, department of commerce. American Bridge Co., Pittsburgh, was building 69 of these vessels, the Bethlehem Shipbuilding Corp., 16, the Dravo Contracting Co., Pittsburgh, 34, and the Newport News Shipbuilding & Dry Dock Co., 14.

Malleable Castings Drop

Washington, June 8.—Production of malleable castings in April totaled 66,733 tons, a drop from 74,520 tons produced in March, according to returns to the department of commerce from 139 companies. Shipments dropped to 66,326 tons from 70,193 tons, and bookings from 58,804 to 52,-649 tons. Further comparisons of production and bookings follow:

1925	Total tons produced	Per cent of capacity	Total tons booked	Monthly capacity
April	62,918	55.5	57,946	113,332
Total (4 mos.)	250,646	55.1	225,154	454,701
May	60,972	54.2	50,569	112,495
June	58,819	51.8	47,247	113,514
July	57,172	50.3	56,873	113,624
August	56,761	49.8	48,647	113,935
September	58,474	51.4	49,780	113,697
October	68,122	61.0	65,420	111,744
November	60,800	55.1	55,552	110,273
December	65,766	59.0	53,991	111,332
1926				
January	75,658	68.2	65,738	110,824
February	66,401	59.2	58,379	110,895
March	74,520	67.4	70,193	110,539
April	66,733	60.4	52,649	110,415
Total (4 mos.)	283,312	64.0	235,570	442,673

Blows In New Furnace

Pittsburgh, June 8.—The National Tube Co., June 3 blew in a new blast furnace at its McKeesport, Pa., plant. P. C. Patterson, vice president, W. A. Cornelius, general manager, and other officials of the company attended the lighting of the stack. The new unit replaces No. 4 of the monongahela blast furnaces, which was shut down last October. It is the third of its type to be installed and is equipped with every known safety device. The furnace has a daily capacity of 650 tons. A. H. Wardwell is superintendent of the new furnaces.

Locomotive Shipments Lower in May

Washington, June 8.—May shipments of locomotives totaled 140, a drop of 11 from April but 39 ahead of May 1925, according to reports of the principal manufacturers to the department of commerce. Domestic shipments totaled 105 for steam and 14 for electric. Foreign shipments of steam locomotives gained from 1 to 12 while electric dropped from 16 to 9 in the April-May period. Following are further comparisons of shipments and unfilled orders:

Year and Month	Shipments Total	Shipments Domestic Steam	Shipments Domestic Electric	Unfilled order Total	Unfilled order Domestic Steam	Unfilled order Domestic Electric
1920	2,683	1,318	306	.....	.....	.....
1921	1,558	830	221	.....	.....	.....
1922	1,405	1,056	128	.....	.....	.....
1923	3,378	2,982	207	.....	.....	.....
1924	1,554	1,312	99	.....	.....	.....
1925						
May	101	65	9	478	324	48
Total (5 mo.)	505	341	55	.....	.....	.....
June	114	58	8	411	274	47
July	76	56	12	386	259	39
Aug.	118	91	6	334	199	48
Sept.	100	42	16	390	278	41
Oct.	93	47	21	530	386	40
Nov.	106	52	8	585	435	46
Dec.	104	68	18	708	557	54
Total	1,216	755	144	.....	.....	.....
1926						
Jan.	121	96	11	653	506	53
Feb.	163	101	22	572	442	60
March	162	146	11	780	635	50
April	151	122	12	713	580	44
May	140	105	14	726	585	46
Total (5 mo.)	737	570	70	.....	.....	.....

France To Sell Scrap

Washington, June 8.—A supplementary commercial agreement has just been concluded between France and Italy, according to a cablegram received by the department of commerce from Commercial Attache H. C. MacLean, Rome. France has agreed to increase Italy's allotment of scrap iron from the present annual quota of 120,000 tons to a maximum of 200,000 tons in proportion to the increase in Italy's imports of French iron and steel beyond a certain minimum.

Western Screw Mfg. Co., Chicago, has increased capital stock from $75,-000 to 2500 shares no par value.

News of Societies

AN ELABORATE program of papers has been prepared for the fifth annual convention of the National Industrial Advertisers association to be at the Hotel Sylvania, Philadelphia, June 22-23. "Industrial Advertising in its Relation to Management" will be the central theme of the meeting. By invitation, the business press department of the Associated Advertising Clubs of the World will attend the convention. What is said to be the largest exhibit of industrial advertising has been arranged by the advertisers association, this display being in the Atlantic building and consisting of between 300 and 400 panels or over 1200 running feet of exhibits. The program for the convention is as follows:

Tuesday, June 22

MORNING

Philadelphia's welcome—"A Banker's Viewpoint of Industrial Advertising in Its Relation to Management," by Thomas A. Mitten, Philadelphia.
"The Custodians of Good Will," by Bennett Chapple, president National Industrial Advertisers association and director of publicity, American Rolling Mill Co., Middletown, O.
"What the Sales Department Expects of the Advertising Department," by Victor Wilmott, general sales manager, Dodge Mfg. Co.
"Copy," by W. H. Beatty, vice president, Newell, Emmet Co., New York.
"The Ingersoll-Rand Campaign," by George Morrison, advertising manager, Ingersoll-Rand Co., New York.
"Team Work Between Sales and Advertising," by Alfred Kaufman, president, Link-Belt Co.

AFTERNOON

"Industry's Appreciation of the Paramount Value of Advertising," by Ezra Clark, sales manager, Clark Tructractor Co., Buchanon, Mich.
"Making Direct Mail More Effective," by Homer Buckley, president, Buckley Dement & Co., Chicago.
"What Should Be Expected of Advertising and How to Measure Advertising Results," by Thomas Logan, president, Thomas Logan Co., New York.
"The Johns-Manville Campaign Illustrated," by W. S. Lockwood, advertising manager, Johns-Manville Inc.
"The Launching of the Graybar Co.," by Herbert Metz, advertising manager, Graybar Co., New York.
Visit to exhibition and award of prizes.

Wednesday, June 23

MORNING

"Industrial Advertising in England," by an official of large English industrial advertiser.
"Some Industrial Advertising Successes," by J. C. McQuiston, advertising director, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
"Some Advertising Problems," by James Lincoln, president, Lincoln Electric Co., Cleveland.
"The Lehigh Portland Cement Campaign," by W. J. Chandler and C. G. Norton, Lehigh Portland Cement Co., Allentown, Pa.
"Using National Media to Reach Industrial Markets," by Merle Thorpe, Nation's Business, Washington.

AFTERNOON

"Is Co-operative Advertising Here To Stay," by W. S. Hays, secretary of the National Industrial Advertisers association and secretary, National Slate association, Philadelphia.
"Highlights of the Bridgeport Brass Campaign," by A. D. Guion, advertising manager, Bridgeport Brass Co., Bridgeport, Conn.
"Making Sure You Are Right Before Going Ahead," by R. O. Eastman, Eastman Inc., Cleveland.
"The Anaconda Copper Mining Co. Campaign," by J. N. McDonald, advertising manager, Anaconda Copper Mining Co., New York.
"Distinctive Features of the Timken Campaign," by Howard Spohn, advertising agent, Timken Roller Bearing Co.
"Keeping Fit—Why, When and How," by Bill Roper, football coach, Princeton university.
Election of officers and business session.

* * *

Engineers To Discuss Waste

Practical methods for eliminating waste will be the chief topic for consideration at the thirteenth national convention of the Society of Industrial Engineers at the Bellevue-Stratford hotel, Philadelphia, June 16-18. The program for the meeting has been announced as follows:

Tuesday, June 15

EVENING

Joint meeting of all sections of waste elimination committee.

Wednesday, June 16

MORNING

Address of welcome, by Dr. E. J. Cattell, Philadelphia chamber of commerce.
Greeting of Dr. W. F. Rittman, president, Society of Industrial Engineers.

Management Session

Management discussion with several speakers presenting actual cases of waste due to lack of co-ordination between various parts of a business.

EVENING

Dinner meeting of research committee

"Prevention of Waste in Government," by Dr. Lent D. Upson, director, bureau of governmental research, Detroit.
"Prevention of Waste in Industry," by Dr. F. O. Taylor, Parke, Davis & Co., Detroit.

Manufacturing Session

"Methods of Palmolive Co. for Eliminating Waste," by John A. Riley, general superintendent, Palmolive Co., Milwaukee.
"Waste Elimination in the Newport News Shipbuilding & Dry Dock Co.," by W. B. Ferguson, production manager, Newport News Shipbuilding & Dry Dock Co., Newport News, Va.
"Waste Elimination in Woodworking Plants," by Carle M. Bigelow, president, Waste Eliminators Inc. and Bigelow, Kent, Willard Co. Inc., Boston.

Thursday, June 17

MORNING

Distribution Session

"Expecting the Impossible of Advertising," by Walter Drey, vice president and general manager, *Forbes Magazine*, New York.
"Studies of Distribution," by Alvin E. Dodd, manager, domestic distributing department, Chamber of Commerce of the United States.
Open forum on "Some Causes of Waste in Distribution and Means for Prevention," from viewpoints of accountant, production manager and sales engineer.

AFTERNOON

Plant inspections.

EVENING

Dinner meeting of committee for elimination of unnecessary fatigue

"Reduction of Waste of Human Lives by the Elimination of Unnecssary Fatigue," by Dr. Louis I. Harris, commissioner of health, City of New York.
Discussion by E. R. Hayhurst, college of medicine, Ohio State university, Columbus, O.
"First Principles of Industrial Posture and Seating," by Miss Nellie Swartz, director, bureau of women in industry, New York state department of labor, Albany, N. Y.

Labor Session

"Eliminating Labor Wastes by Providing Improved Mechanical Facilities," by Harold J. Payne, electric industrial truck department, Society for Electrical Development, Inc., New York.
"Developing Foremen in Order to Reduce Waste," by W. D. Stearns, superintendent of personnel, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
"Employes Co-operation in Elimination of Waste in Industry," by George Hodge, assitant manager, industrial relations department, International Harvester Co., Chicago.

Friday, June 18

MORNING

Office Session

"Office Supplies and Machinery," by John Mitchell, bureau of methods, General Electric Co., Schenectady, N. Y.
"Clerical Operations," by A. P. McIntyre, comptroller, Lever Bros. Co., Cambridge, Mass.
"Arrangement and Equipment," by Orrin G. Sherman, Metropolitan life Insurance Co., New York.

AFTERNOON

Plant inspections.

Educational Committee

"Aims of Management Education," by Richard Lansburgh, secretary of labor and industry, Commonwealth of Pennsylvania.
Discussion by Col. E. T. Miller, executive secretary, United Typothetae of America, Chicago.

EVENING

"Economic Maladjustments Resulting from Disordered Currencies, Disrupted Markets, Changed Currents of Trade, etc.," by Harold G. Moulton, director, Institute of Economics, Washington.
"Industrial Engineer's Part in the Waste Elimination Movement," by L. W. Walkace, executive secretary, American Engineering council, Washington.

Convention Calendar

June 7-10—Association of Iron and Steel Electrical Engineers. Twenty-second annual convention and exposition at Hotel Sherman, Chicago. John F. Kelly, 513 Empire building, Pittsburgh, secretary.

June 9-12—National Association of Purchasing Agents. Eleventh annual convention and exposition, Ambassador hotel and auditorium, Los Angeles. W. L. Chandler, Woolworth building, New York, secretary.

June 9-16—American Railway association. Annual meeting of mechanical division including master car builders and master mechanics, at Atlantic City, N. J. V. R. Hawthorne, 431 South Dearborn street, Chicago, is secretary.

June 9-16—Railway Supply Manufacturers' association. Annual convention and exhibition, Young's Million Dollar pier, Atlantic City, N. J. J. D. Conway, 1841 Oliver building, Pittsburgh, is secretary.

June 14-17—National Association of Cost Accountants. Seventh international cost conference at Ambassador hotel, Atlantic City, N. J. S. C. McLeod, 130 West Forty-second street, New York, is secretary.

June 16-18—Society of Industrial Engineers. Thirteenth national convention, Bellevue-Stratford hotel, Philadelphia. George C. Dent, 608 South Dearborn street, Chicago, executive secretary.

June 21-25—American Institute of Electrical Engineers. Annual convention at White Sulphur Springs, W. Va. F. L. Hutchison, 29 West Thirty-ninth street, New York, secretary.

June 21-25—American Society for Testing Materials. Annual convention at Chalfonte Haddon hall, Atlantic City, N. J. C. L. Warwick, 1315 Spruce street, Philadelphia, secretary.

June 22—Foundry Equipment Manufacturers association. Regular quarterly meeting, Cleveland hotel, Cleveland. H. Cole Estep, 1213 West Third street, Cleveland, secretary-treasurer.

June 28-July 1—American Society of Mechanical Engineers. Spring-summer convention at Palace hotel, San Francisco. Calvin W. Rice, 29 West Thirty-ninth street, New York, secretary.

Obituaries

HENRY FRANCIS LAVINO, secretary of E. J. Lavino & Co. and also of the Lavino Furnace Co., Philadelphia, died at Chestnut Hill, Pa., May 27, of heart disease. Mr. Lavino was born in Smyrna, Turkey, 69 years ago, son of a Dutch banker. He was educated in Belgium and came to the United States in his twenties. He was a brother of Edward J. Lavino, president of the two companies.

* * *

Harvey Clark McClary, 78, vice president of Fairbanks, Morse & Co., Chicago, diesel engine and equipment manufacturer, died at his home in Evanston, Ill., May 30.

* * *

J. R. McDonald, 45, of the engineering department of the Stephens-Adamson Mfg. Co., Aurora, Ill., dropped dead, June 2, while playing on a golf course at Aurora.

* * *

John M. Townley, president of the National Hardware Association of the United States, and head of the Townley Metal & Hardware Co., Kansas City, Mo., died May 28 at a hospital in that city.

* * *

G. W. C. Lomb, reputed to have been the inventor of the first wire spoked wheel and the mechanical device known as the floating axle, died recently at Cincinnati, aged 75. He was a graduate of Oberlin college, Oberlin, O.

* * *

James Melvin Brown, aged 42, designing engineer for the Westinghouse Electric & Mfg. Co., East Pittsburgh, died suddenly at his home in Pittsburgh June 1. He had been an employe of the Westinghouse company for 25 years.

* * *

Augustus B. Seelig, vice president and general manager of the Michigan Copper & Brass Co., Detroit, died June 2 at the age of 49. His industrial connections had been with the Chase Co. Inc., Waterbury, Conn., where he had been secretary and sales manager, and with the Michigan company. He was born in Southington, Conn.

* * *

John Thomson, president of the Thomson National Press Co., Long Island City, N. Y., died May 31 at his home in Brooklyn, N. Y., aged 72. Mr. Thomson for more than 35 years was engaged in mechanical, electrical and civil engineering, especially in the design and manufacture of printing presses and water meters. He obtained more than 200 patents in this country and abroad.

* * *

William McCray Dravo, aged 57, of Sewickley, Pa., died suddenly of acute indigestion at his home June 4. He was treasurer of the Dravo-Doyle Co., a subsidiary of the Dravo Contracting Co., and the Dravosburg Dock & Construction Co., First National Bank building, Pittsburgh. He was born Aug. 23, 1865. He was a member of the Edgeworth club and the Sons of the American Revolution.

* * *

John H. Eustace, vice president in charge of operations of the Peoples Gas Light & Coke Co., Chicago, died June 4, in that city, aged 70. Mr. Eustace had been in the gas business about 57 years. He was known nationally for economical and efficient operation methods. Mr. Eustace was a member of many gas associations and of various Chicago social organizations and clubs.

* * *

Raymond P. VanCamp, president of the VanCamp Hardware & Iron Co., Indianapolis, died May 30 of heart disease at the age of 52. He was born March 9, 1874, and was son of the founder of the VanCamp company which is one of the largest wholesale hardware distributors in the United States. Mr. VanCamp had been a member of the board of directors of the National Hardware association.

* * *

Clifford W. Watson, industrial pioneer of New Castle, Pa., died in that city recently after being in failing health for the past year. He was born in New Castle, Pa., July 5, 1849. He engaged in the banking business. Later he became president of the Vulcan Iron Co., Ltd., now out of business. Mr. Watson was a promoter and part owner of the Standard Wire Co. at New Castle, and was interested in the first electric light plant of that city. He was active in promoting business activities in New Castle but in recent years has been retired.

* * *

Chester D. Massey, honorary president of the Massey-Harris Co., Toronto, Ont., agricultural implement manufacturer, died June 2 at his residence in that city, aged 76. His death was not unexpected, as he hed been in failing health for some time. Mr. Massey was born in Newcastle, Ont., and early in life entered the workshops of his father, the late Hart A. Massey, which, became known as the Massey-Harris Co. Mr. Massey became president on the death of his father. He was identified with numerous other business enterprises, but lately devoted a great part of his attention to philanthropic and educational activities.

Plan Survey of Boiler Producing Industry

Trade extension activities were widely discussed at the thirty-eighth annual convention of the American Boiler Manufacturers' association conducted at the Homestead, Hot Springs, Va., May 31-June 2. One of the principal speakers on the program was Charles F. Abbott, executive director of the American Institute of Steel Construction, New York, who urged all branches of the steelmaking and steel fabricating industry to assume greater initiative in extending the use of steel. Mr. Abbott's address is published elsewhere in this issue of IRON TRADE REVIEW.

The boiler association went on record as favoring trade extension activities and passed a resolution calling for a study of the boiler making industry. This will include a survey of horsepower now in existence and of capacity of boiler producing plants to determine whether industry has excess capacity. About 50 per cent of the members of the association attended the meeting. A paper which attracted attention was on the subject of "Internal Boiler Corrosion" and was presented by F. N. Speller, National Tube Co., Pittsburgh.

Officers of the association were reelected as follows: President, George W. Bach, Union Iron Works, Erie, Pa.; vice president, A. R. Goldie, Babcock-Wilcox, Goldie-McCulloch Co., Galt, Ont.; and secretary-treasurer, A. C. Baker, Cleveland Steel Co., Cleveland.

Dismantling Furnaces

The Central Iron & Steel Co., Harrisburg, Pa., is having its two Paxton blast furnaces dismantled. No. 1 furnace was built in 1855 and rebuilt in 1886. No. 2 furnace was built in 1871, remodeled in 1917 and relined in 1919. These furnaces, which have not been active since late 1917, had a combined capacity of 85,000 tons. The contract for dismantling the furnaces has been awarded to Michlovitz & Co., Harrisburg.

Construction and Enterprise

Concise and Timely Business Building Opportunities from the Field of Industry

BERKELEY, CALIF.—American Forge Co., San Francisco, has bought site for plant at Murray street and Ashby avenue West Berkeley, and will remove its business to plant to be built there. Joseph Eastwood is president, 25 Tehama street, San Francisco.

LOS ANGELES—Advance Auto Body Works is having plans revised for a 2-story plant 125 x 146 feet at Macy street and Mission road.

NEW BRITAIN, CONN.—Landers, Frary & Clark, manufacturers of hardware, will build a 6-story addition and a smaller building to increase production.

WOODSTOCK, CONN.—E. H. Johnson, Ansonia, Conn., has bought a mill here which he kill equip for the manufacture of insulated wire.

LA GRANGE, GA.—La Grange Iron Works, L. C. Schaudies, superintendent, is having plans made for rebuilding its burned plant.

ABINGDON, ILL.—Abingdon Sanitary Mfg. Co. has let contract to F. L. Borer for three additions to its plant.

CHICAGO—McClintic-Marshall Co., First National Bank building, is building an addition to its Morava shops 600 x 1000 feet for railroad bridge and heavy structural fabricating.

CHICAGO—Strom Bearings Co., 4535 Palmer street, has been incorporated with 20,000 shares no par value to manufacture ball bearings and steel products by John H. Walters, H. Elmer Mergerle and Ben M. Smith.

CHICAGO—Cooper Steel Spring Co., 2900 South Michigan avenue, has been incorporated with $1000 capital to manufacture steel springs by H. A. Kridler, David K. Cochrane and Edgar L. George. Cochrane & George, 35 North Dearborn street, are correspondents.

CHICAGO—E. & W. Mfg. Co., 2011 South Michigan avenue, has been incorporated with $5000 capital to manufacture automobile and radio accessories by Jack M. Eisenberg, George Wippman, Morris A. Wippman and I. Eisenberg. Pennish & Rashbaum, 110 South Dearborn street, are correspondents.

CHICAGO—Compton Excavating & Loading Machine Co., 111 West Monroe street, has been incorporated with $100,000 capital to manufacture excavating and loading machines by W. J. McGinnis, Theodore Compton and Walter A. Code. William J. McGah, 722 Harris Trust building, is correspondent.

CHICAGO—Automatic Cone Valve Co., 32 West Randolph street has been incorporated with $200,000 capital to manufacture devices for controlling flow of liquids by David D. Golberg, Gabriel Lipman and Jesse G. Sissman. Sissman & Sissman, 30 West Randolph street, are attorneys.

CHICAGO—T. P. Peterson Corp., 403 North LeClaire avenue, has been incorporated with $125,000 capital to manufacture metal and wooden furniture by Myers H. Gladstone, Anita Sloan and T. F. Peterson. Myer H. Gladstone, 134 North LaSalle street, is correspondent.

CHICAGO—Mechanical Refrigerated Car Co., 118 North LaSalle street, has been incorporated with $10,000 capital to manufacture mechanically refrigerating railroad cars, tools and appurtenances by Otto Luhr, Karl A. Milar, and Henry J. Eiflar. Frank L. Wolf, 1143 The Rookery, is correspondent.

Where additional information is presented, reference is made to date of issue in which previous item appeared.

DECATUR, ILL.—Gobberdil Mfg. Co., 630 Standard Life building, has been incorporated with $10,000 capital to manufacture mechanical devices by Eileen Fitzsimmons, L. W. Summers and J. P. Gobberdill. McDavid & Monroe, 502 Milliken building, are correspondents.

INDIANAPOLIS—General Automotive Corp., recently incorporated, will begin manufacture of anti-slap pistons for automobile motors, under rights acquired from the Anti-Slap Piston Co., Rahwah, N. J. William M. Fogarty and Eugene M. Fogarty are directors.

LAPORTE, IND.—New York Blower Co. of Laporte has been incorporated with $300,000 capital by Henry Mathis, J. W. Mathis Jr., Robert G. Harrop and John Sheroch.

DES MOINES, IOWA—Work will soon be started on a 5-story, 88 x 150 steel and concrete building at 215 East Seventh street, for the International Harvester Co.

MONROE, LA.—Miller-Guerriero Hardware Co., capital $25,000, incorporated by W. G. Miller, Frank Guerriero and Louise Guerriero.

NEW ORLEANS—Morris Cylinder Body Vehicle Co., capital $50,000, chartered by E. J. Morris, president, S. J. Satterly, vice president and E. J. Morris Jr., secretary-treasurer to manufacture special bodies for cars and vehicles.

SHREVEPORT, LA.—Southwestern Gas & Electric Co. has awarded contract to L. E. Meyer Construction Co. of Chicago for an 86,000-volt electric transmission line from Shreveport to Texarkana, Ark.

ALTOONA, KANS.—Altoona Pipe Line Supply Co. incorporated with 100 shares no par value.

KANSAS CITY, KANS.—Kansas City Navigation & Supply Co., capital $150,000, chartered by Recy McClimans, Kenia, Kans., Lee McClimans, Emporia, Kans, and Grover T. West, Tulsa, Okla., to build and operate barges for water transportation.

NEWTON, KANS.—Santa Fe railroad is constructing new rail and frog shop building costing approximately $165,000. Additions are being made to the car shop at Ottawa, Kans., including new welding machinery and boiler building costing $100,000. H. W. Wagner, Topeka, is chief engineer in charge of construction.

RUSSELL, KANS.—Russell County Pipe Line Co., G. A. Johnson, president, has acquired a lease on refinery of West Kansas Refining Co. in Russell field and will operate plant which has daily capacity of 2500 barrels.

BOSTON—American Steel & Iron Co. has been incorporated with $50,000 capital to deal in metal wastes by Louis H. Resnik, president, 281 Myrtle street, Manchester, N. H., Louis H. B. Kaplan, 27 Prospect street, Ware, Mass., Morris Katz and Samuel Resnik.

BOSTON—Devon Mfg. Co. has been incorporated with $500,000 capital and 10,000 shares no par value to manufacture refrigerating apparatus and parts, by Eugene T. Connolly, president, Arthur H. Weed, treasurer, 1 Federal street, Boston, and Henry H. Guild.

CAMBRIDGE, MASS.—Empire Implement Mfg. Co. has been incorporated with $20,000 capital to manufacture tool grinding and sharpening machinery by Henry A. Ferreira, president, William J. Irwin, treasurer, 85 Evans street, Medford, Mass., and Barbara Irwin.

FALL RIVER, MASS.—Cash Bros. Inc. has been incorporated with $21,000 capital to manufacture sheet metal work and roofing by George H. Cash, president, 167 Hillman street, New Bedford, Mass. Ernest F. Cash and Beulah R. Cash, Fall River.

NEWTON, MASS.—Christiansen Screw Co. has been incorporated with 100 shares no par value to manufacture machinery and metal products by Howard A. O'Grady, 23 Broadway, Newton, Norman M. Christiansen, 55 Oxford street, Winchester, Mass., and William Pullen.

NORTHAMPTON, MASS.—New England Saw & Tool Co. has been incorporated with $100,000 capital to manufacture machinery and power equipment by William E. Quinn, president, Kathleen H. Griffin and Daniel D. O'Brien.

SOUTHRIDGE, MASS.—Lithmans Air-O-Matic Oil Burner Inc. has been incorporated with $100,000 capital to manufacture oil burning apparatus by Arthur A. Blanchard, president, Louis J. Labell, treasurer and Leon J. Croteau, 405 Main street, Worcester, Mass., clerk.

WORCESTER, MASS.—H. W. Northridge Co. Inc. has been incorporated with $50,000 capital to manufacture automotive parts by Oswald C. Morin, president, Henry W. Northridge, treasurer, 1154 Pleasant street, Worcester, and Ruth G. Northridge.

DETROIT—Taylor Chemical Laboratories has been incorporated to manufacture soldering solutions by Milton Taylor, 8100 East Jefferson avenue, Raymond L. Hawkins and Edward J. Nelson.

DETROIT—Universal Visor Co. has been incorporated with $5000 capital to manufacture automobile accessories by William H. Helter, 1570 Jefferson avenue, Harry J. Sherman, and Robert Montgomery.

DETROIT—Detroit Air Appliance Corp. has been incorporated with $50,000 capital and 3000 shares no par value to manufacture high pressure injector starters by S. L. McKay, Sarnia, Ont.; J. J. Smith and H. V. Wilkie, Detroit.

HOLTON, MICH.—Holton Mfg. Co., has been incorporated with $25,000 capital to manufacture sanitary barn equipment and hay tools by Emma E. Ralston, 1334 South Carroll avenue, Freeport, Ill.; Fred C. Barnhart and Clara E. Barnhart, Holton.

PONTIAC, MICH.—Oakland Motor Car Co. will build an addition with 23,000 square feet

of floor, for which equipment will be required.

SHELBY, MICH.—Harrison Mfg. Co. has been incorporated with $90,000 capital to manufacture metal and wood novelties by John A. Harrison, Gordon L. Harrison and John E. Harrison.

ALBERT LEA, MINN.—The Enterprise Iron Works has been incorporated with a capital of $50,000 by C. W. Potter.

FARIBAULT, MINN.—Faribault Woolen Mills is having plans made by Ralph W. Richardson, engineer, 301 Zenith building, St. Paul, for a 1-story 40 x 60 brick and steel fireproof power plant to cost $50,000.

MINNEAPOLIS—The Brooks Parlor Furniture Co. will rebuild the factory at 1115 East Hennepin avenue, recently destroyed by fire. The building will be two stories, brick and steel.

ST. PAUL—Wm. M. Murphy & Son, 340 Endicott building, has been awarded the general contract by the American Hoist & Derrick Co., for a 1-story brick and steel addition to the machine shop at 64 South Robert street, to cost $15,000.

ST. PAUL—Brown & Bigelow and the Quality Park Box Co., Midway district, St. Paul and Minneapolis, have awarded the general contract to Wm. M. Murphy & Son, 340 Endicott building, for a 1-story, 48 x 74 and 54 x 74 brick and steel power plant to develop 2,000 horsepower, and with latest type power plant equipment will cost $300,000. Toltz, King & Day, Inc. Builders, are the architects and engineers.

ST. LOUIS—Ozark Pipe Line Co., subsidiary of Roxana Petroleum Corp., is starting repainting and repairing its 10-inch line from Cushing, Okla. to Wood River, Ill R. P. Bascom is general manager.

OMAHA, NEBR.—Metcalf & Co., has been awarded the general contract by the Julien Chevrolet Co., for a 2-story 61 x 170 steel and brick garage at 17th and Cuming streets.

JERSEY CITY, N. J.—Wave Cut File & Tool Corp. has been incorporated with 1000 shares no par value by Peter Degenhardt, Glenridge; Carl W. Bellinggrodt, Lyndhurst; Alfred Degenhardt, Glenridge. Eric H. Jentz, Jersey City, is attorney.

PLAINFIELD, N. J.—Heating Plant Combustion Engineering Co. has been incorporated with $50,000 capital by George S. Kent, Plainfield; Charles A. Eaton Jr., Charles A. Eaton, North Plainfield. Ralph J. Smalley, Plainfield, is attorney.

BINGHAMTON, N. Y.—Binghamton Electric Mfg. Corp. has been incorporated with $40,000 capital to manufacture machinery by R. B. Lamber and B. Lewis.

BROOKLYN—Hercules Equipment has been incorporated with $5000 capital to manufacture contractors' supplies by M. Allie and George R. Ruzzo. L. Dworkin, 570 Seventh avenue, is attorney.

BUFFALO, N. Y.—Savory has been incorporated with $10,000 capital to manufacture metal and enameled goods by G. E. Lesauvage, C. E. Wells and E. J. Barcalo. Kenedicks, Cook, Mitchell & Bass, Buffalo, are attorneys.

MOUNT VERNON, N. Y.—Acme Body Co. has been incorporated with $12,000 capital to build automobile bodies by E. Guerci and H. Guerci. J. Denyi, 312 East 141st street, New York, is attorney.

NEW YORK—The Phoenix Utility Co., 61 Broadway, has closed for steel for a power plant at Pine Grove, Pa.

NEW YORK—J. K. Welding Co. has been incorporated with $20,000 capital by J. A. Klevens, T. R. Berg and H. C. McKinley. A Eisenstat, 38 Park Row, is attorney.

NEW YORK—Moore & Steel Corp. has been incorporated with 100 shares common no par value to operate an iron foundry by P. Smith, A. F. VonBernuth and A. O. Dawson. Rearick, Dorr, Lewis & Marshall, 61 Broadway, are attorneys.

CROSBY, N. D.—Bids will be received by O. Woolfrey, city auditor, for a waterworks system, including a 50,000-gallon steel elevated tank, 18,769 lineal feet of 6-inch cast iron pipe, 2636 lineal feet of 8-inch cast iron pipe, 40 hydrants, and fire pump equipment. Dakota Engineering & Construction Co., Valley City, are the engineers.

WASHBURN, N. D.—Siems, Helmers & Schaffner, 514 Guardian Life building, St. Paul, have been awarded the contract by the Otter Tail Power Co., Fergus Falls, Minn., for a 60 x 100 brick and steel power plant on Missouri river near Washburn, N. D., to furnish 5000 kilovolts.

CLEVELAND—Klein-Patterson Auto Body Co., G. W. Patterson president, 2336 East Twenty-second street, is having plans made for a 1-story shop 60 x 160 feet.

DAYTON, O.—Delco Light Co., E. G. Beich-ler president, is considering plans for additions to its plants.

DAYTON, O.—Midwest Machine Co. has been incorporated with 1000 shares no par value by Speed Warren, N. S. Talbot, R. E. Cowden, M. E. Stier and F. D. Schnacke.

SPRINGFIELD, O.—Springfield Malleable Iron Co., T. W. Ludlow president, 37 Bechtle avenue, has let contract to Bellefontine Bridge & Iron Co. for four factory buildings to replace fire loss.

BARTLESVILLE, OKLA.—Phillips Petroleum Co. has decided to double the size of its gasoline plants in the Texas Panhandle field to handle 50,000 gallons a day. Clark Brothers Co. has contract for engine compressor equipment.

ENID, OKLA.—Bolene Refining Co. has leased plant of Oil State Refinery with daily capacity of 2500 barrels. Improvements to extent of $450,000 are under way on the plant. V. E. Bolene is general manager.

MARAMAC, OKLA.—Southern Rig. & Reel Co., capital $1,000, has been incorporated by D. C. Ryan, K. K. Ayers and B. K. Ryan.

MUSKOGEE, OKLA.—Kansas, Oklahoma & Gulf railroad has increased capital from $12,000,000 to $21,000,000 to provide for extensions and betterments.

MUSKOGEE, OKLA.—Oklahoma Salvage Co., capital $10,000 has been incorporated by H. H. Peterson, W. A. Peterson and Nellie Peterson to salvage automobiles.

OKLAHOMA CITY, OKLA.—P & H Valve Co., capital $15,000, incorporated by Sam Pledger, H. H. Hinkle and P. G. Rawdon.

POTEAU, OKLA.—Magnolia Coal Co., capital $15,000, chartered by J. R. Edelman, Poteau, W. F. Gaither, Paris, Ark., and J. H. Wright, Fort Smith, Ark., to operate a coal mining business.

TULSA, OKLA.—Auto Specialties Mfg. Co., captial $50,000, chartered by F. S. Young, 324

Exports of Machinery

In number unless otherwise designated

	April		10 mos. ended April,	
	1925	1926	1926	1925
Power-driven metalworking machinery (total)	.....	127	771*	992
Boring and drilling machine tools	.....	121	984*	1,756
Planers, shapers and slotters	.....	27	126*	249
Bending and power presses	.....	23	252*	329
Gear cutting machines	.....	116	138*	427
Milling machines	.....	64	528*	566
Punching and shearing machines	.....	24	105*	158
Power hammers	.....	17	111*	187
Other metalworking machinery and parts (pounds)	.....	1,076,341	8,674,263*	.....
Engine lathes	25	.....	107†	.....
Turret lathes	11	.....	40†	.....
Other lathes	41	.....	250†	.....
Vertical boring mills and chucking machines	8	.....	39†	.....
Thread cutting and automatic screw machines	75	96	775	702
Knee and column type milling machines	104	.....	128†	.....
Other milling machines	75	.....	199†	.....
Disk type gear cutting machines	.....	.....	1†	.....
Other gear cutting machines	16	.....	147†	.....
Vertical drilling machines	28	.....	124†	.....
Radial drilling machines	7	.....	19†	.....
Sensitive drilling machines	34	.....	278†	.....
Other drilling machines	314	.....	556†	.....
Metal sawing and cutting off machines	19	.....	69†	.....
Shapers and slotters	33	.....	350†	.....
Planers	111	.....	117†	.....
External cylindrical grinding machines	350	179	632	1,703
Internal grinding machines	21	53	276	220
Metalworking tool sharpening machines	260	.....	496†	.....
Other metalgrinding machines (pounds)	102,312	108,991	907,487	1,184,789
Sheet metalworking machines (pounds)	389,909	.....	1,156,984†	.....
Plate metalworking machines (pounds)	31,452	.....	66,189†	.....
Rod or wire working machines (pounds)	21,429	.....	165,089†	.....
Forging machinery (pounds)	502,022	.....	1,948,043†	.....
Rolling mill machinery (pounds)	616,650	.....	1,788,816†	.....
Other power driven metalworking machinery and parts (pounds)	691,739	.....	3,064,492†	.....
Other metalworking machinery (total value)	$500,870	$345,924	$3,808,551	$2,914,703
Cranes with swinging booms	3	5	79	53
Other cranes	18	19	175	163
Hoists and derricks except mining	588	425	5,223	4,595
Air compressors up to 25 cu. ft. capacity	816	392	5,029	1,496‡
Air compressors over 25 cu. ft. capacity	258	216	2,368	859‡
Sprocket and other power transmission (pounds)	623,876	185,659	3,586,836	2,922,781
Other chains (pounds)	1,168,574	1,727,410	10,403,280	8,969,159

*July 1 to Dec. 31, 1925.
†Beginning Jan. 1, 1926.
‡Beginning Jan. 1, 1925.

Industrial Business Changes

CECIL R. LAMBERT CO., INC., Detroit, conveying and handling equipment, has changed its name to Mechanical Handling Systems, Inc., better to represent the nature of its business. Additions to its facilities are being made but no change in ownership or management.

* * *

Gregory-Butts Co., Tacoma, Wash., has changed its name to Variety Machinery Co.

* * *

Reading Iron Co. has established a branch sales office at 310 Union Mortgage building, Cleveland, in charge of T. D. Graham.

* * *

National Blow Pipe & Copper Works Inc., Chicago, has changed its name to E. S. Black Mfg. Co. Inc.

* * *

Federal Tool & Alloy Steel Corp., New York, has changed its name to the Swedish Iron & Steel Corp.

* * *

Allman Gas Engine and Machine Co., New York, has changed its name to Champion Line Machinery.

* * *

Stockbridge Machine Co., Worcester, Mass., has opened a sales office at 149 Broadway, New York, in charge of P. K. Dayton.

* * *

Illinois Pressed Steel Car Co., Chicago, has changed its name to the Pressed Steel Car Co. of Illinois.

* * *

Hillsmith & Co., Dayton, O., has been adopted as the new name for the engineering and contracting firm formerly known as Frank Hill Smith Inc.

* * *

The Superior Steel Castings Co., Benton Harbor, Mich., has changed its name to the Superior Steel & Malleable Castings Co. to better identify itself with its products.

* * *

Wyckoff Drawn Steel Co., Pittsburgh, manufacturer of cold-finished steel, has appointed the J. W. Judge Co., Call building, New Montgomery street, San Francisco, exclusive representative on the Pacific coast.

* * *

Superior Brass & Fixture Co. is the name adopted by a consolidation of the Superior Brass & Fixture Co. and the Independent Display Fixture Co., Chicago.

* * *

American Steel & Wire Co. has opened a district office for Oklahoma and Kansas at 217 Atlas Life building, Tulsa, Okla., in charge of George F. Bell.

* * *

Neilsen Inc., Lawton, Mich., has been incorporated to take over the business of the Neilsen Barton Chuck & Tool Co. F. S. Squiers is secretary.

* * *

Kaw Boiler Works Co., Kansas City, Kans., has changed its name to Kaw Steel Construction Co., to represent better the nature of its business.

* * *

Pilling & Co. Inc., pig iron, alloys, coke and coal, have removed their office at Boston to room 628 Chamber of Commerce building, that city. Fred F. Newcomb is resident manager.

* * *

Buda Co., Harvey, Ill., announces removal of its Southwestern factory sales office from Fourth and Detroit streets, Tulsa, Okla, to new quarters at 311 East Second street.

* * *

Rybolt Furnace Co., Ashland, O., has taken over the plant of the Modern Way Furnace Co., 221 East Berry street, Fort Wayne, Ind., and will operate it in production of its furnaces.

* * *

C. F. Braun Co., Alhambra, Calif., manufacturer of cooling systems for industrial plants, has opened a sales and engineering office at Dallas, Tex., in charge of V. V. Jacomini, district manager.

* * *

C. I. Capps Co., Jacksonville, Fla., C. I. Capps, president, has moved to larger quarters at 1800 East Eight street. The company has just completed an addition to its foundry and cleaning room also.

* * *

Federal Shipbuilding & Dry Dock Co. has removed its sales office to the general offices and works at Kearny, N. J., on the Lincoln highway, this being its mailing address.

* * *

Lincoln Brass Foundry, 911 North Wilbur street, South Bend, Ind., will move its business to Mishawaka, Ind., occupying the plant formerly used by the Werra Aluminum Co.

* * *

Bridgeport Brass Co., Bridgeport, Conn., has added Maryland, West Virginia and Washington, D. C., to the territory of H. Allen Faust, 915 City Center building, Philadelphia, who previously had covered Pennsylvania and Southern New Jersey.

* * *

Sullivan Machinery Co., Chicago, manufacturer of mining and quarrying machinery, has moved its northwestern sales office from the Hatton building to 120 South Lincoln street, Spokane, Wash., where larger space is available. Robert T. Banks is in charge of the office.

* * *

Timken Roller Bearing Service & Sales Co. has moved its Omaha office from 2524 Farnum street to larger quarters at 2240 Douglas street, in charge of A. D. Hackim. The company's Los Angeles office has been moved from 1241 Hope street to 1361 South Figueroa street.

* * *

Manning, Maxwell & Moore Inc., New York, has removed its general accounting and clerical forces to Bridgeport, Conn. The railway and mill supply department clerical and service forces have been removed to the warehouse at Jersey City. Executive and sales offices continue at the general offices in the Pershing square building, 100 East Forty-second street, New York.

Iron and Manganese Ores and Minerals

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old Range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent	9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, f.o.b. cars Atlantic ports

Spanish low phosphorus, 52 to 54 per cent	10.00 to 11.00
North African low phosphorus	9.25 to 9.75
Swedish and Norwegian low phosphorus, 68 per cent	10.25 to 10.75
Swedish foundry or basic, 66 to 68 per cent	9.00 to 9.50
Spanish foundry or basic, 50 to 54 per cent	8.75 to 9.25
North African foundry and basic 50 to 54 per cent	8.50 to 9.50

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian, minimum 47 per cent.....nominal
Indian minimum 47 per cent.....nominal
Caucasian, 53 to 55 per cent.....
Washed .....40 cents c.i.f. tidewater

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$18.00
Washed gravel, imported duty paid eastern tidewater, per net tons	17.00 to 18.00

W. Haskell, H. K. Tucker and C. W. Cochran.

PHILADELPHIA—Work will be started at once by the West Jersey Sand & Supply Corp., Delaware and Marlborough streets, on a $13,000 warehouse at Tyson and Delaware streets.

PHILADELPHIA—Contract for a $20,000 warehouse for the Booth Bottling Co., Ruth and Clearfield streets, has been awarded to the Murphy, Quigley Co., 1518 Sansom street.

PHILADELPHIA—The Baltimore & Ohio railroad has awarded steel through the United Gas Improvement Contracting Co., general contractor, for a large terminal warehouse.

PHILADELPHIA—B. &. R. Plating & Rustproofing Co. has been incorporated with $10,000 capital to do plating and rustproofing of metals, by Thomas Liggett Jr., Jenkintown, Pa., D. J. Rathbone, Riverside, N. J., and Charles V. Bayer, Philadelphia.

SHARON, PA.—Westinghouse Electric & Mfg. Co., E. M. Kerr president, East Pittsburgh, Pa., will build a 5-story building 72 x 220 feet.

WYOMING, PA.—Wyoming Shovel Works has given contract to the Austin Co., Cleveland, for a building to replace a recent fire loss. It will be 100 x 200 feet, monitor type. N. G. Robertson is president and general manager.

MITCHELL, S. D.—Bids will be received by Frank McGovern, city auditor, for a 250,000 gallon steel water tank on 125-foot steel tower.

DALLAS, TEX.—Southern Pacific railroad plans new freight treminals. Tentative plans call for two 2-story buildings, 200 x 600 feet, with minor additions.

DALLAS, TEX.—Magnolia Pipe Line Co. has awarded contracts for an 8-inch oil line, about 180 miles long, from Hull station to Mirando field. D. C. Stewart, Magnolia building, is general manager.

DALLAS, TEX.—Lone Star Gas Co. has completed surveying for an 18-inch gas line, about 200 miles long, to be built from Childress in the Panhandle region to Petrolia, Tex., where connection is made with main system to Dallas. Oklahoma Contracting Co. has contract for laying line.

FORT WORTH, TEX.—Eugene Laundry Machine Co. has been incorporated with $15,000 capital by William E. Hartt, F. L. Hartt and A. L. Jackson.

HOUSTON, TEX.—Kinzbach Tool Co. has been incorporated with $10,000 capital by F. Kinsbach, E. S. Corbett and P. F. Matlock.

HOUSTON, TEX.—Houston-Port Arthur Railway Co. incorporated with $85,000 capital by William Doherty, W. W. Moore and J. Y. Powell with view of constructing an 82-mile line between the two cities.

HOUSTON, TEX.—Gulf Refining Co. is considering building a refinery at Amarillo, Tex., in the Panhandle oil field and improvements in plants at Port Arthur and Fort Worth. Geo. H. Tabor, Frick building, Pittsburgh, is vice president and general manager.

WICHITA FALLS, TEX.—Western Oil Corp. has acquired refinery formerly operated by Sunshine State Oil Co. and is overhauling plant for early operation. Walter K. Campbell is president.

SEATTLE—American Tin Corp. has been incorporated with $500 capital by A. F. McIntosh, William O'Brien and H. B. Smith.

SEATTLE—F. S. Lang Mfg. Co., manufacturer of stoves, is adding a kitchen equipment department for the manufacture of steam tables, bakery cabinets and other equipment.

LA CROSSE, WIS.—Plans by W. S. Woods, consulting engineer, for a new LaCrosse river bridge costing $75,000 have been approved and bids are now being asked. It will be a reinforced concrete deck girder span, 160 feet long and 66 feet wide. C. C. Congdon is city engineer.

LAKE GENEVA, WIS.—Frank Huml has let contracts for a $25,000 garage and repair shop.

LAKE GENEVA, WIS.—Reinert & Malsch are the successful bidders for the general contract for a $35,000 public garage and repair shop for the Lake Geneva Auto Station, owned by W. B. Krueger.

MILWAUKEE—Contracts have been let by the Kearney & Trecker Corp., milling machines, 5924 National avenue, for a third story addition to one of its buildings.

MILWAUKEE—A permit has been granted to the Milwaukee Die Casting Co., to erect a 1-story addition, 40 x 50 feet, to its plant at 295-301 Fourth street.

MILWAUKEE—A charter has been granted to the Badger Brass Foundry Co., capital stock $12,000. The incorporators are Aloys J. Krause, George Druml and William N. Leininger, the latter having been superintendent of the Superior Foundries, Inc., brass castings, for several years.

MILWAUKEE—E. D. Fryer, 1432 Stowell avenue, has engaged Henry Danischefsky, engineer and general contractor, 1484 Humboldt avenue, to take charge of a $500,000 cold storage warehouse project. It will replace dock No. 12 of the Chicago, Milwaukee & St. Paul railway on South Water, near Clinton street. A large artificial ice and refrigerating plant is specified.

MT. HOREB, WIS.—A public garage, sales building and repair shop costing about $35,000 will be erected here by the Mt. Horeb Hardware & Auto Co. Architect M. P. Schneider, Madison, Wis., is in charge.

SPARTA, WIS.—Naset Bros., Sparta, have been awarded the general contract at $74,000 for building an upper grade vocational school at the State School for Dependent Children here.

TWO RIVERS, WIS.—The Auto Service Co., William Rehrauer manager, will close bids June 10 for a public garage and service station at Washington and Twenty-first streets, to cost about $35,000.

Business in Canada

WAINWRIGHT, ALTA.—The Wainwright Refinery proposes to build a 1,000-barrel capacity oil refinery here. Mr. Wraither has general contract for construction.

VICTORIA, B. C.—The Union Oil Co. will build a new and larger plant here. H. B. Beasley is local manager.

CORNWALL, ONT.—Warp Tension Governors, Ltd. has been incorporated to manufacture pulp and paper machinery, textile machinery, etc., with $150,000 capital by James E. Quig, Curtis D. Quig, George A. Stiles, and others.

FORT WILLIAM, ONT.—The city will start work at once on construction of a substation here to cost $42,800. Macaw & MacDonald, Winnipeg, Man., have the general contract.

GUELPH, ONT.—The Page-Hersey Tubes, Ltd. has started work on plant addition here to handle increased business. Considerable machinery and tools will be required.

GUELPH, ONT.—The Live Wire Co. has purchased the building formerly occupied by the Guelph Carriage Top Co. here, is remodeling building and will install equipment for manufacturing purposes.

HAMILTON, ONT.—George E. Waller, transportation manager of the Dominion Power & Transmission Co., has confirmed the report that the company will build a $500,000 power station here.

KILTCHENER, ONT.—Roffman Rim Corp., Erie building, Cleveland, is contemplating establishing a manufacturing plant here.

NIAGARA FALLS, ONT.—The Niagara Wire Weaving Co. Ltd. has instructed Norman Mann, architect, to prepare plans and specifications for a large addition to the company's plant here. Bids in connection with

undertaking will be called in June.

OSHAWA, ONT.—The General Motors Corp. of Canada, Ltd. plans an addition to its works here to cost $750,000.

ROUGE RIVER, ONT.—Plans are being prepared by N. A. Armstrong Co., Ltd., 7 King street east, Toronto, for pump house here for C. White & Co., 92 Church street, Toronto, Ont.

SAULT STE. MARIE, ONT.—According to Hon. James Lyons, minister of lands and forests in the provincial government an agreement has been reached whereby the Ontario Hardwood Lumber Co. will erect mills including hardwood flooring mills, saw mills, veneer plants and other woodworking plants in this district at a cost of approximately $1,000,000. It is understood that W. Parkinson of Akalyn, Wisconsin, in company with J. A. Warner are behind the undertaking.

SUDBURY, ONT.—Plans are nearing completion and bids will be called soon for addition to power station and pumping house here. W. J. Ross is clerk.

TORONTO, ONT.—Young-Davidson Mines, Ltd., has been incorporated to mine, smelt and refine ores, metals and minerals, with a capital of $3,000,000, by Laurence S. Lyon, Charles G. Knott, Frank M. McKay, and others.

TORONTO, ONT.—Spruce Falls Power & Paper Co., Ltd., has been incorporated, with a capital of $12,000,000, by Reginald H. Parmenter, William S. Morlock, Sydney E. Wedd, and others.

TORONTO, ONT.—The Ruttle Safety Signal Co., Ltd., has been incorporated to manufacture automobile lamps and signals, with a capital of $24,000, by Walter Rubidge, Frederick D. Benjamin, Mary A. Ruttle, and others.

TORONTO, ONT.—Canadian Rail & Harbor Terminals Ltd. has let the contract for warehouse on the water-front to Parlknap, Inc., Toronto, and one mile of railroad track is being laid to bring in supplies to the site.

TORONTO, ONT.—J. M. Loose & Sons, 251 Sorauren avenue, manufacturers of piano actions, have let general contract to Walter Davidson & Co., Ltd., 188 Duke street, for addition to plant here to cost $25,000.

TORONTO, ONT.—Wells & Grey, Ltd., Confederation Life building, have the general contract for condenser building on Eastern avenue to cost $90,000 for the Consumers' Gas Co., 19 Toronto street, Toronto.

TORONTO, ONT.—Plans are being prepared for the city council for two high pressure pumping plants, a filtration system, 9 miles of tunneling and a 50,000,000-gallon reservoir, estimated to cost $14,000,000. Commissioner of works, R. Harris, city hall, Toronto.

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. works

Pennsylvania, No. 1	$40.00 to 43.00
Pennsylvania, No. 2	35.00 to 38.00
Ohio, No. 1	40.00 to 43.00
Ohio, No. 2	35.00 to 40.00
Illinois, No. 1	40.00 to 43.00
Illinois, No. 2	35.00 to 38.00
Kentucky, No. 1	40.00 to 43.00
Kentucky, No. 2	38.00 to 40.00
Missouri, No. 1	40.00 to 43.00
Missouri, No. 2	35.00 to 38.00
Maryland, No. 1	43.00 to 47.00
Maryland, No. 2	39.00 to 42.00

SILICA BRICK

Pennsylvania	40.00
Chicago	49.00
Birmingham	48.00 to 52.00

MAGNESITE BRICK

Per Net Ton Seaboard Base

9 x 4½ x 2½	65.00

CHROME BRICK

(Per Net Ton)

9 x 4½ x 2½	45.00

TORONTO, ONT.—Electrical Devices Ltd. has been incorporated to manufacture and deal in electrical supplies, devices and equipment, with capital of $40,000, by Joseph Singer, Lawrence Kert, Michael F. Goldstein, and others.

TORONTO, ONT.—Anglin, Norcross, Ltd., Temple building, Toronto, have the general contract and the Canadian McArthur Concrete Pile Co., Montreal, the contract for piles in connection with engine and car shops here for the Canadian National railways.

TORONTO, ONT.—Berry Kirkland Mines Ltd. has been incorporated to mine, smelt and refine ores, metals and minerals, with capital of $150,000, by Arthur W. Holmested, Leonard V. Sutton, Robert J. Anderson, and others.

TORONTO, ONT.—Canadian Aviation Co., Ltd. has been incorporated to manufacture and deal in airplanes, flying machines, sea planes, balloons and dirigibles, with capital of $50,000, by George G. Green, Wilbert M. Emery, Frank Burrows, and others.

DRUMMONDVILLE, QUE.—Bids have been received by E. Sperling, c/o Cellulose, Ltd., Cumberland, Md., for a $7,000,000 artificial silk manufacturing plant here.

HULL, QUE.—The Langlois Furniture Co., Cobourg, Ont., is receiving tenders for a manufacturing plant here to cost $100,000. Buildings will be of brick and steel construction.

KINGDON, QUE.—Several contracts have been awarded in connection with the building of a lead and zinc plant here to cost $1,500,000 for the Kingdon Mining, Smelting & Mfg. Co., Ltd., 314 Beaver Hall hill, Montreal, Que.

MONTREAL, QUE.—The Columbus Rubber Co., 1349 Demontigny street east, is building addition to its plant here. Wm. Irving, 671 St. James street, is general contractor.

MONTREAL, QUE.—L. O. Taillon, 200 Chambord street, proposes to build an automobile repair plant here and is interested in lathe, drill press and other machinery and equipment.

MONTREAL, QUE.—Redpath Girouard, Ltd. has been incorporated to manufacture heating and combustion machinery, with $15,000 capital by Walter S. Johnson, Kathleen Gale, Dorothy H. Coventon, and others.

MONTREAL, QUE.—Panyard Piston Rings, Ltd. has been incorporated to manufacture motors, machinery and appliances, with $50,000 capital by Royal E. Werry, Adolph Gardner, Ben Bernstein, and others.

MONTREAL, QUE.—E. S. Mattice has been appointed general manager of Steel Gates, Ltd., the company formed by P. Lyall & Sons Construction Co., Ltd., to handle the contract for construction of steel gates for Welland canal, representing an expenditure of about $4,500,000 in which some 20,000 tons of steel will be required.

MONTREAL, QUE.—The Herbert garage, 415 Ontario street east, is asking for bench lathe and miscellaneous tools for auto repair shop. A. Herbert is purchasing agent.

ST. JEROME, QUE.—The Quebec Southern Power Co., Montreal, Que., has taken over the municipal power plant here and proposes to develop an additional 3000 horsepower.

THREE RIVERS, QUE.—The Foundation Co. of Canada, Ltd., Medical Arts building, Montreal, Que., has the general contract for the construction of 4 dams and 2 dykes on the Gatineau river at Lake Baskatong, for the Canadian International Paper Co., Notre Dame street, Three Rivers. Engineer, A. H. White, 100 East Forty-second street, New York.

VERDUN, QUE.—The ratepayers have authorized $15,000 for enlargements and additional equipment for electric light plant here. Address Mayor Dupuis.

New Trade Publications

COPPER STEEL—A booket has been issued by the American Sheet & Tin Plate Co. summarizing the results of tests made on the relative resistance to corrosion of steel sheets containing a small portion of copper and those without. The conclusions of a number of scientists who have investigated the tests are given, with data on the tests.

STATIC CONDENSERS—Static condensers for power factor correction on motor circuits of various voltages are described in a leaflet by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. The application, construction and installation of these devices are described and advantages of correction of the power factor are pointed out.

RECUPERATOR—Unit recuperators manufactured by the Mantle Engineering Co., Pittsburgh, are described and illustrated in a bulletin by that company. The necessity for recuperation is presented, with a description of the apparatus provided by the company for that purpose. Sectional views clearly illustrate operation of the device.

WELDED CHAIN—S. G. Taylor Chain Co., Chicago, has issued a revised general catalog containing complete data for safe loads on double sling chains at various angles.

THRUST BEARINGS—Standard Steel & Bearings Inc., Plainville, Conn., has issued data sheets of dimensions, prices and load ratings of its thrust bearings.

DRAFT GAGES—Indicating and recording draft gages manufactured by the Foxboro Co., Inc., Foxboro, Mass., are suggested as a matter of economy in boiler operation in a leaflet, which also suggests that fuller information may be obtained in another publication by the company.

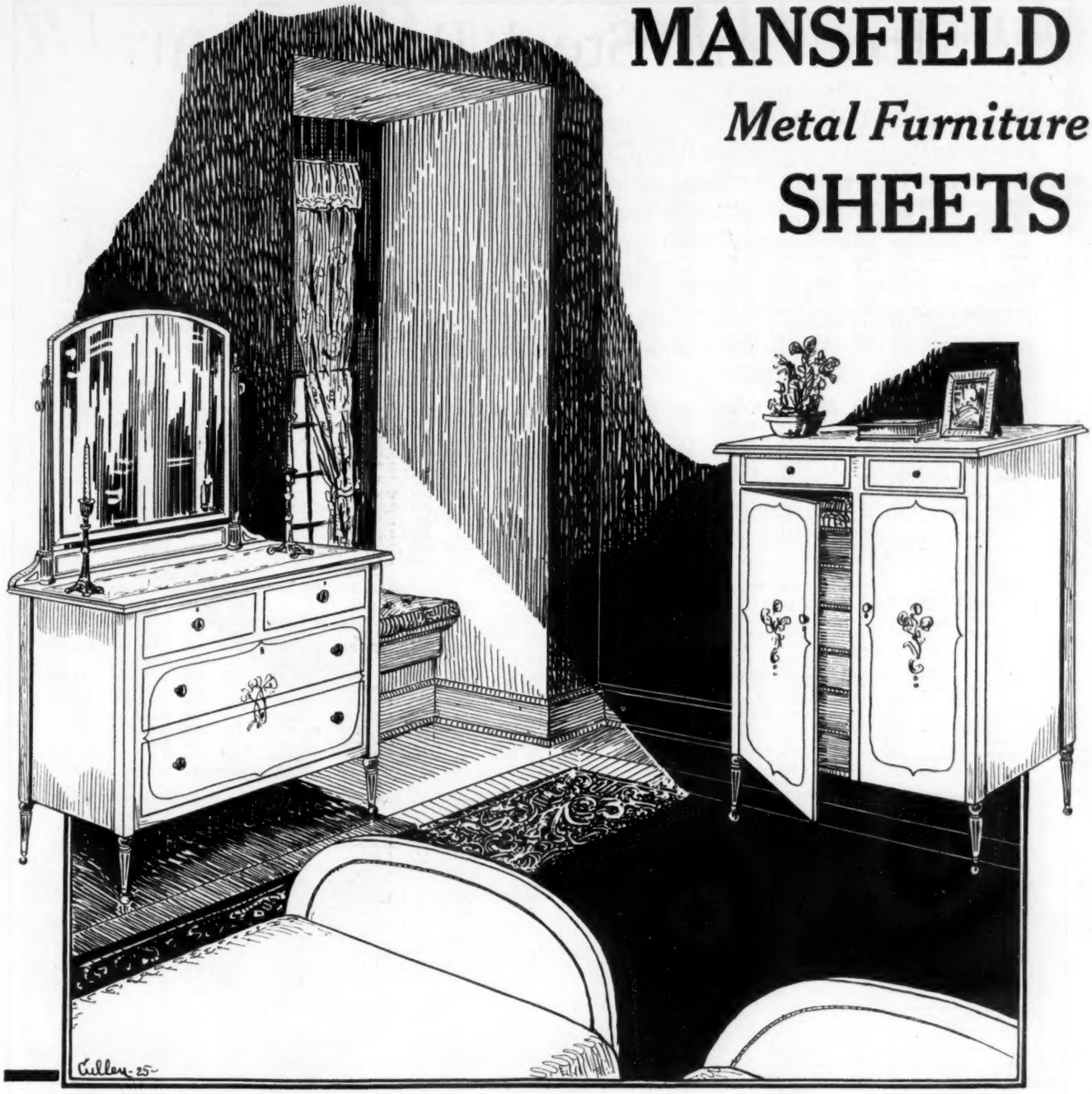
TRAMRAIL—Moving mountains of paper daily is the text of a bulletin by the Cleveland Electric Tramrail Division of the Cleveland Crane & Engineering Co., Wickliffe, O. It is well illustrated and the pictures are supplemented by enough text to make them clear.

CHUCK WORK—The final book of a trilogy on modern tool methods for turret lathes has been issued by the Warner & Swasey Co., Cleveland. It is the second section on chuck work. A discussion of piloting, new treatment of the permanent setup and a chapter on "The Final Question," are features of the booklet. The three contain much information of value to lathe users.

MANSFIELD

Metal Furniture

SHEETS



Mansfield Sheets are used as basic material for the products of many of the largest manufacturers of Metal Bedroom Furniture. *Remarkable quality* accounts for this preference by buyers whose specifications are unusually exacting.

MASTER TEC BRAND

Scientific treatment of the metal in the open hearth furnace and the Mansfield Method of pouring, are responsible for exceptional uniformity in quality and excellent finish of Mansfield Steel Sheets.

Mansfield Sheet & Tin Plate Company

Mansfield, Ohio

District Sales Offices:
12-237 General Motors Bldg., Detroit, Mich.
1372 Wrigley Bldg., Chicago, Ill.
410 Pierce Bldg., St. Louis, Mo.
1106 National City Bldg., New York, N. Y.
2002 Union Trust Bldg., Cleveland, Ohio
1504 West Venango Street, Philadelphia, Pa.

Contributing Member
SHEET STEEL
TRADE EXTENSION COMMITTEE

District Sales Offices:
1403 Merchants Bank Bldg., Indianapolis, Ind.
1020 Union Trust Bldg., Cincinnati, Ohio
640 Endicott Bldg., St. Paul, Minn.
237 Rialto Bldg., San Francisco, Calif.
509 Wilcox Bldg., Los Angeles, Calif.
1426 L. C. Smith Bldg., Seattle, Wash.

Iron and Steel Production

IN GROSS TONS

Pig Iron

Compiled by IRON TRADE REVIEW

	—Stacks—		——Output——		—Stacks—		——Output——		—Stacks—		——Output——		—Stacks—		——Output——	
	No.	In	Total	Av.daily	No.	In	Total	Av. daily	No.	In	Total	Av. daily	No.	In	Total	Av. daily
	1907				1908				1909				1910			
January	376	311	2,174,801	70,155	398	139	1,081,813	34,897	406	234	1,787,473	57,683	416	311	2,599,995	83,871
February	374	308	2,047,036	73,109	401	150	1,086,809	37,476	407	233	1,682,470	60,088	417	311	2,429,525	86,768
March	377	304	2,186,709	70,539	398	154	1,229,856	39,672	406	229	1,822,024	58,793	417	310	2,588,736	83,508
April	378	327	2,226,708	74,223	398	146	1,155,122	38,504	406	224	1,731,406	57,687	418	291	2,477,700	82,590
May	391	329	2,291,030	73,904	396	145	1,168,002	37,677	407	236	1,866,757	60,218	419	279	2,374,802	76,607
June	392	341	2,237,420	74,580	395	154	1,106,300	36,876	408	240	1,929,929	64,334	420	271	2,288,279	76,276
July	396	335	2,253,243	72,685	397	166	1,228,604	39,632	409	258	2,088,620	67,375	420	254	2,158,124	69,617
August	397	329	2,243,656	72,376	399	181	1,366,019	44,065	412	278	2,232,642	72,021	422	244	2,103,791	67,864
September	399	329	2,174,148	72,471	399	189	1,416,252	47,208	413	297	2,378,655	79,201	420	234	2,048,461	68,282
October	401	314	2,359,690	17,119	400	200	1,573,824	50,764	413	309	2,589,681	83,538	421	230	2,086,205	67,297
November	398	226	1,820,558	60,685	402	212	1,582,314	52,744	414	311	2,532,740	84,425	421	218	1,910,385	63,679
December	398	154	1,234,733	39,830	403	221	1,723,664	55,602	416	314	2,682,702	86,539	421	193	1,779,899	57,416
Total			25,249,732	*69,177			15,718,579	*42,947			25,325,099	*69,383			26,845,902	*73,550
	1911				1912				1913				1914			
January	421	210	1,766,658	56,985	421	227	2,052,806	66,220	423	297	2,787,800	89,929	423	199	1,879,336	60,624
February	421	226	1,781,285	63,617	422	235	2,098,796	72,372	423	306	2,578,670	92,095	423	219	1,888,607	67,450
March	421	236	2,165,764	69,863	420	237	2,411,529	77,791	423	278	2,762,823	89,123	423	232	2,341,551	75,534
April	421	220	2,044,904	68,163	421	239	2,377,621	79,254	421	297	2,754,353	91,812	422	212	2,261,501	75,383
May	421	206	1,871,388	60,367	423	243	2,503,341	80,753	421	285	2,816,825	90,865	422	198	2,097,019	67,646
June	421	202	1,773,282	59,109	424	242	2,433,737	81,125	422	283	2,616,883	87,229	422	193	1,904,566	63,486
July	423	196	1,776,108	57,294	422	245	2,402,567	77,502	422	264	2,558,275	82,525	422	187	1,955,324	63,075
August	423	206	1,921,832	61,995	423	255	2,500,163	80,650	424	260	2,537,018	81,839	422	187	1,996,483	64,403
September	423	216	1,973,918	65,797	419	262	2,444,454	81,482	425	258	2,494,098	83,137	422	180	1,882,718	62,757
October	421	214	2,092,061	67,486	422	280	2,683,645	86,569	425	244	2,539,924	81,933	422	162	1,767,227	57,007
November	421	214	1,999,100	66,637	423	289	2,639,562	87,985	424	225	2,229,960	74,322	421	150	1,501,269	50,042
December	422	215	2,032,301	65,558	423	291	2,777,292	89,590	424	191	1,976,138	63,746	421	154	1,495,325	48,236
Total			23,198,601	*63,558			29,325,513	*80,124			30,652,767	*83,980			22,970,926	*62,934
	1915				1916				1917				1918			
January	421	165	1,591,024	51,323	421	304	3,171,878	102,319	422	310	3,159,839	101,930	435	294	2,403,227	77,523
February	421	179	1,666,592	59,521	421	312	3,078,548	106,157	422	317	2,649,935	94,641	435	319	2,318,242	82,723
March	421	190	2,046,280	66,009	422	315	3,327,630	107,343	423	331	3,255,813	105,026	438	338	3,209,996	103,548
April	421	197	2,114,518	70,484	422	320	3,225,496	107,517	425	333	3,328,061	110,936	437	351	3,273,355	109,112
May	421	207	2,255,157	72,747	423	321	3,364,584	108,535	425	340	3,413,677	110,119	437	360	3,451,884	111,351
June	421	221	2,369,932	78,998	423	325	3,213,818	107,127	427	347	3,260,234	108,675	437	353	3,316,148	110,538
July	421	234	2,563,311	82,687	419	316	3,221,127	103,907	429	351	3,337,442	107,659	437	364	3,408,584	109,954
August	421	246	2,774,825	89,510	419	317	3,197,838	103,156	431	357	3,238,970	104,483	439	371	3,378,479	108,983
September	420	266	2,834,342	94,478	419	326	3,208,041	106,935	431	342	3,140,742	104,691	438	364	3,413,223	113,774
October	420	276	3,120,340	100,656	419	328	3,508,180	113,167	433	354	3,296,286	106,332	437	364	3,482,392	112,335
November	421	285	3,035,235	101,174	420	322	3,317,805	110,593	434	344	3,198,597	106,620	437	360	3,347,944	111,595
December	421	295	3,201,605	103,278	422	309	3,184,178	102,715	435	321	2,885,380	93,077	435	351	3,434,114	110,778
Total			29,573,161	*81,022			39,019,123	*106,609			38,164,976	*104,561			38,437,488	*105,308
	1919				1920				1921				1922			
January	435	330	3,306,279	106,654	432	285	3,012,373	97,172	436	184	2,414,753	77,895	430	127	1,645,804	53,090
February	435	311	2,943,347	105,120	432	305	2,984,257	102,904	436	155	1,929,394	68,906	429	139	1,630,180	58,220
March	435	279	3,088,023	99,614	433	315	3,375,768	108,895	436	103	1,594,866	51,447	429	155	2,035,908	65,674
April	435	216	2,474,374	82,479	433	278	2,752,670	91,754	436	96	1,190,751	39,691	429	161	2,070,161	69,005
May	433	197	2,107,729	67,991	433	297	2,991,825	96,510	436	90	1,215,272	39,202	427	175	2,309,348	74,495
June	433	199	2,114,028	70,467	433	302	3,046,623	101,553	436	74	1,064,007	35,466	427	191	2,362,455	78,748
July	434	240	2,424,212	78,200	434	291	3,043,918	98,190	435	69	864,642	27,892	427	170	2,403,030	77,517
August	432	266	2,742,081	88,453	434	306	3,145,536	101,468	436	69	954,901	30,802	427	143	1,810,665	58,408
September	433	163	2,480,790	82,692	434	317	3,124,308	104,143	435	84	985,795	32,859	427	189	2,024,008	67,466
October	432	216	1,864,424	60,142	435	290	3,288,341	106,075	435	95	1,234,450	39,821	428	218	2,629,655	84,827
November	432	252	2,407,369	80,244	435	255	2,935,081	97,836	429	120	1,414,958	47,165	428	241	2,846,110	94,870
December	432	262	2,626,074	84,711	435	202	2,700,268	87,105	429	123	1,642,775	52,992	428	253	3,083,520	99,468
Total			30,578,730	*83,777			36,400,968	*99,456			16,506,564	*45,223			26,850,844	*73,563
	1923				1924				1925				1926			
January	428	261	3,228,226	104,136	414	248	3,015,480	97,273	411	251	3,372,207	108,781	385	225	3,319,789	107,089
February	424	278	2,993,918	106,925	414	263	3,073,619	105,987	411	256	3,214,067	114,788	382	223	2,923,850	104,423
March	424	295	3,523,595	113,664	410	269	3,465,389	111,787	410	246	3,571,422	115,207	377	235	3,458,171	111,554
April	423	311	3,546,308	118,210	410	234	3,226,107	107,537	409	221	3,211,235	107,041	376	237	3,438,805	114,627
May	423	322	3,868,486	124,790	411	187	2,619,986	84,515	405	196	2,933,907	94,642	376	229	3,480,120	112,262
June	424	322	3,667,868	122,262	411	158	2,022,836	67,427	399	191	2,679,045	89,301	.....	.....	.....	.....
July	418	299	3,684,677	118,860	411	145	1,783,457	57,531	396	188	2,665,262	85,976	.....	.....	.....	.....
August	418	270	3,448,886	111,254	411	150	1,882,986	60,741	391	192	2,767,171	87,328	.....	.....	.....	.....
September	418	254	3,117,526	103,917	411	174	2,053,617	68,454	387	200	2,725,885	90,862	.....	.....	.....	.....
October	418	245	3,142,642	101,375	411	182	2,461,727	79,410	386	209	3,017,889	97,351	.....	.....	.....	.....
November	418	229	2,891,191	96,373	411	204	2,514,979	83,832	385	220	3,023,257	100,775	.....	.....	.....	.....
December	418	231	2,912,527	93,952	411	229	2,956,389	95,367	385	234	3,249,057	104,808	.....	.....	.....	.....
Total			40,025,850	*109,659			31,076,572	*84,908			36,370,404	*99,645			16,620,726,	*110,071

Steel Ingots

Compiled by American Iron and Steel Institute

	Total	Av. daily	Total	Av. daily	Total	Av. daily	Total	Av. daily	Total	Av. daily
	1922		1923		1924		1925		1926	
January	1,891,857	72,764	3,841,095	142,263	3,649,913	135,182	4,193,281	155,307	4,150,469	159,633
February	2,071,772	86,324	3,471,843	144,660	3,826,246	153,050	3,752,352	156,348	3,801,776	158,407
March	2,814,667	104,247	4,066,680	150,618	4,206,699	161,796	4,194,340	161,321	4,488,362	166,236
April	2,902,240	116,090	3,963,736	158,549	3,348,466	128,787	3,583,676	137,834	4,123,941	158,613
May	3,218,794	119,215	4,216,355	156,161	2,640,034	97,779	3,454,971	132,883	.....	.....
June	3,127,775	120,299	3,767,256	144,894	2,065,676	82,627	3,204,451	123,248	.....	.....
July	2,952,806	118,112	3,531,458	141,258	1,877,789	72,223	3,084,472	118,634	.....	.....
August	2,629,256	97,380	3,695,788	136,881	2,552,891	98,188	3,420,998	131,577	.....	.....
September	2,818,261	108,395	3,356,776	134,271	2,827,625	108,755	3,489,565	134,214	.....	.....
October	3,410,265	131,164	3,577,091	132,485	3,125,418	115,756	3,888,814	144,030	.....	.....
November	3,430,309	131,935	3,134,321	120,551	3,121,149	124,846	3,902,900	156,116	.....	.....
December	3,300,416	132,017	2,863,266	114,531	3,569,251	137,279	3,970,918	152,728	.....	.....
Total	34,568,418	*111,511	43,485,665	*139,825	36,811,157	*117,984	44,140,738	*141,932	16,564,548	*160,821

*Average.

Where Speed and Power Rule

Years of satisfactory service from their old Brownhoist convinced Chrysler engineers that Brownhoist is building the same speed and power into locomotive cranes as they build into their automobiles.

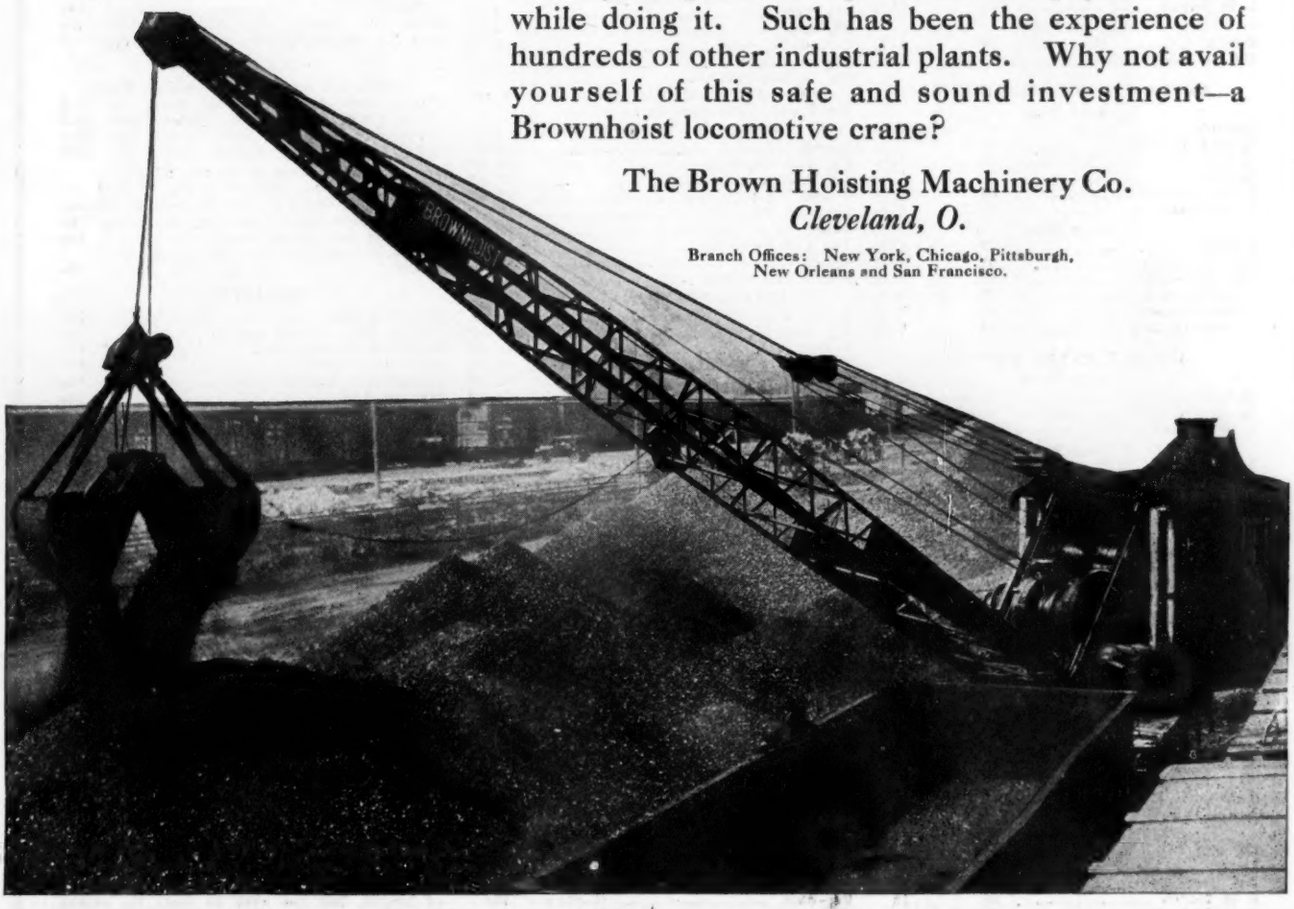
Brownhoist builds both large and small cranes, with creeper or railway truck mountings. We shall be glad to help you solve your handling problem.

Today, Chrysler with a typical industrial plant layout uses a modern Brownhoist 8-wheel steam locomotive crane to unload coal to storage, to load turnings and punchings with magnet and to switch cars in and out of their Jefferson St. yard in Detroit.

You too can select a Brownhoist crane of the proper size and mounting that will cover your yard, solve your particular problem and pay for itself while doing it. Such has been the experience of hundreds of other industrial plants. Why not avail yourself of this safe and sound investment—a Brownhoist locomotive crane?

The Brown Hoisting Machinery Co.
Cleveland, O.

Branch Offices: New York, Chicago, Pittsburgh, New Orleans and San Francisco.



BROWNHOIST

GOOD MATERIAL HANDLING MACHINERY

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount or $4 per ton higher net.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis or $5 per ton higher net.

	Black	Galvanized
Butt Weld		
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½
Lap Weld		
2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½
REAMED AND DRIFTED		
Butt Weld		
1 to 3-inch	60	48½
Lap Weld		
2-inch	53	41½
2½ to 6-inch	57	45½
EXTRA STRONG—PLAIN ENDS		
Butt Weld		
⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½
Lap Weld		
2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½
DOUBLE EXTRA STRONG		
Butt Weld		
½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½
Lap Weld		
2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	33	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS		
Butt Weld		
¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13
Lap Weld		
1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
7 to 6-inch	28	13
7 to 12-inch	26	11
PLUGGED AND REAMED		
Two points less than above		
EXTRA STRONG, PLAIN ENDS		
¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14
Lap Weld		
2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2

DOUBLE EXTRA STRONG		
Butt Weld		
½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39
Lap Weld		
2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)	
2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
4¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON	
1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¾ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN	
1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off
SEAMLESS HOT ROLLED	
2 and 2½-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off
Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Outside diameter	Gage	Net prices per foot f.o.b. Pittsburgh Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2½-inch	12-gage	16c
2½-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	38c
5⅝-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c
Plates less than ¼-inch or lighter than 11 pounds per square foot.	
Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates not Exceeding 72 inches Wide

Plates less than ¼-inch gage, to and including $\frac{7}{16}$-inch; or lighter than 10.2 pounds per square foot to and including 7.65 pounds per square foot..... .20c

Plates over 72 Inches Wide

Plates less than ¼-inch gage, to and including $\frac{7}{16}$-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot ..... .20c

Plates, ordered 7.65 pounds per square foot ..... .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	.20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull material subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c

Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet....No extras

Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

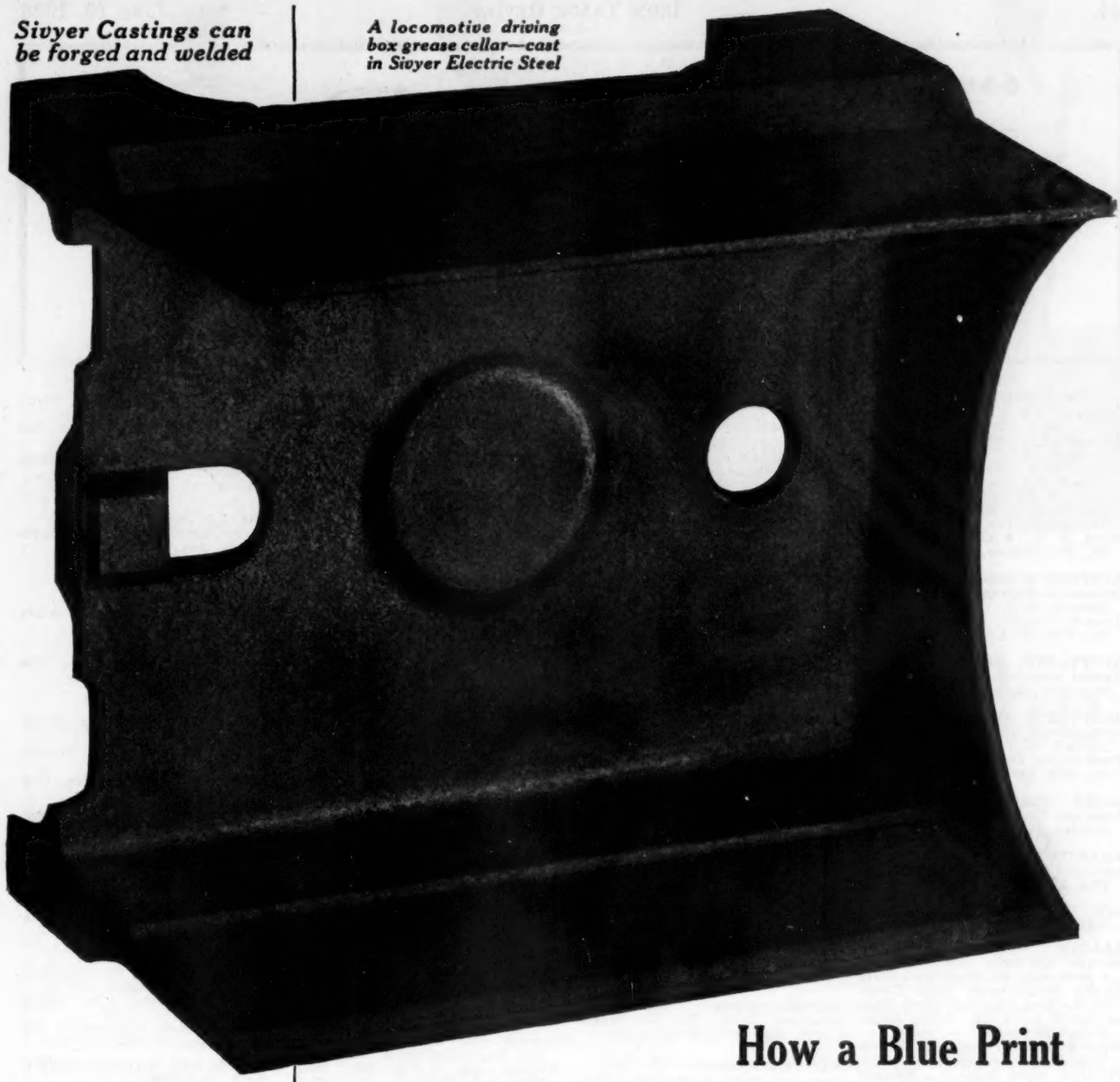
Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared wiht re-entrant angles)

Additional extra ..... .30c

Sivyer Castings can be forged and welded

A locomotive driving box grease cellar—cast in Sivyer Electric Steel



SIVYER (S) CASTINGS

DEPENDABLE

Send Blue Prints

Sending blue prints of the parts that are not giving the service that you think they should —parts that are too heavy —parts that are in constant danger of breakage—parts that incur high machining costs—may bring you a solution of your problems. Sivyer will make recommendations without obligating you in any way.

How a Blue Print Saved 20 Pounds and Stopped Breakage

This casting fits inside the driving box of a locomotive and carries the lubricant for the axle. When made in cast iron this part weighed 55 pounds—and its metal sections were 5/8 and 3/4 of an inch thick. The handling that the part received in roundhouses and repair shops resulted in high breakage cost and a relatively short life of service. The railroad turned to Sivyer. Blue prints of the part were sent for recommendations. As a result Sivyer Electric Steel has replaced the old-fashioned cast iron with a saving of 20 pounds in weight. In Sivyer Steel the part weighs but 35 pounds with metal sections of 5/16 of an inch. And breakage in handling is virtually eliminated.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

"Where-To-Buy"

A classified-by-products list of advertisers for the convenience of readers. If you don't find what you want, write us and we will tell you where to get it. ¶Index to advertisements will give you page number of any advertiser and by referring to advertisement you can get full particulars about products.

ACCUMULATORS
Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.
Pennsylvania Engineering Works, New Castle, Pa.
United Engineering & Foundry Co., Farmers Bank Bldg., Pittsburgh, Pa.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

ACETYLENE (Dissolved)
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACETYLENE GENERATORS
Oxweld Acetylene Co., 30 E. 42nd St., New York City.

ACETYLENE IN CYLINDERS
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACIDS (Pickling)
American Chemical Paint Co., Ambler, Pa.

ADAMITE ROLLS
American Adamite Co., The, 12th & Etna Sts., Pittsburgh, Pa.

AIR COMPRESSORS—See COMPRESSORS (Air)

ALLOYS
Browne, deCourcy, Inc., 8 West 40th St., New York City.
Electro Metallurgical Sales Corp., 30 E. 42nd St., New York City.
Lavino, E. J., & Co., Bullitt Bldg., Philadelphia, Pa.
Metal & Thermit Corp., 120 Broadway, New York City.
Titanium Alloy Mfg. Co., Niagara Falls, N. Y.
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM
Leavitt, C. W., & Co., 30 Church St., New York City.
Rogers, Brown & Crocker Bros., Inc., 21 E. 40th St., New York City.

ALUMINUM (Vanadium)
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM TUBING
Summerill Tubing Co., Bridgeport, Pa.

ANGLES, TEES, CHANNELS—See STEEL (Structural)

ANNEALING BOXES
Adamson Machine Co., The, Akron, Ohio.
Farrell-Cheek Steel Foundry Co., Sandusky, O.
Pittsburgh Malleable Iron Co., 34th & Smallman Sts., Pittsburgh, Pa.
Riter-Conley Co., Oliver Bldg., Pittsburgh, Pa.
Smith, George H., Steel Casting Co., Milwaukee, Wis.
Union Steel Casting Co., 62nd and Butler Sts., Pittsburgh, Pa.
United Engineering & Foundry Co., Farmers Bank Bldg., Pittsburgh, Pa.
Zanesville Malleable Co., Zanesville, Ohio.

ANTI GLARE PREPARATION
Skybryte Co., The, Keith Bldg., Cleveland, O.

APPRAISALS
McKee, Arthur G., & Co., 2422 Euclid Ave., Cleveland, O.

AXLES
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Champion Machine & Forging Co., The 3675 E. 78th St., Cleveland, Ohio.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
National Tube Co., Frick Bldg., Pittsburgh, Pa.

BALING PRESSES
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.

BANDS AND HOOPS (Galvanized Strips)
Sharon Steel Hoop Co., Sharon, Pa.

BANDS (Iron)
Bethlehem Steel Co., Bethlehem, Pa.

BANDS (Steel)
Bethlehem Steel Co., Bethlehem, Pa.

BANDS (Welded Iron and Steel)
Akron-Selle Co., Akron, O.

BAR BENDERS
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.

BARGES (Steel)
American Bridge Co., 71 Broadway, New York City.

BARRELS (Steel)
Cleveland Wire Spring Co., The, 1281 E. 38th St., Cleveland, O.

BARS (Acid Resistant)
Alcumite Corp., The, Dayton, O.

BARS (Alloy)
Central Steel Co., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Wheelock, Lovejoy & Co., Inc., 128 Sidney St., Cambridge, Mass.

BARS (Concrete Reinforcements)
Bethlehem Steel Co., Bethlehem, Pa.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Gulf States Steel Co., Brown-Marx Bldg., Birmingham, Ala.
Laclede Steel Co., Arcade Bldg., St. Louis, Mo.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Truscon Steel Co., Youngstown, O.

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Bethlehem Steel Co., Bethlehem, Pa.
Lockhart Iron & Steel Co., Pittsburgh, Pa.
Morris, Wheeler & Co., 30th and Locust Sts., Philadelphia, Pa.
Penn Iron & Steel Co., Creighton, Pa.
Republic Iron & Steel Co., Youngstown, O.
Truscon Steel Co., Youngstown, O.

BARS (Steel)
Bethlehem Steel Co., Bethlehem, Pa.
Bliss & Laughlin, Inc., Harvey, Ill.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Central Steel Co., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Illinois Steel Co., 208 S. LaSalle St., Chicago, Ill.
Illinois Steel Warehouse Co., 1319 Wabansia Ave., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Pacific Coast Steel Co., Rialto Bldg., San Francisco, Calif.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Tennessee Coal, Iron & Railroad Co., 1351 Brown-Marx Bldg., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, O.

BARS, STEEL (Electric Furnace)
Timken Roller Bearing Co., The, Canton, Ohio.

BEAMS, CHANNELS, ANGLES, ETC.
Bethlehem Steel Co., Bethlehem, Pa.
Blystone Mfg. Co., Ironton St., Cambridge Springs, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Phoenix Iron Co., The, 20 So. 15th St., Philadelphia, Pa.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Snead Architectural Iron Works, Louisville, Ky.

BEARINGS (Ball)
Hoover Steel Ball Co., Ann Arbor, Mich.
New Departure Mfg. Co., The, Bristol, Conn.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Journal)
Hyatt Roller Bearing Co., Newark, N. J.
Keystone Bronze Co., 39th St., Pittsburgh, Pa.

BEARINGS (Motor)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Roller)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BEARINGS (Thrust)
Hoover Steel Ball Co., Ann Arbor, Mich.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BELT CEMENT AND DRESSING (Leather)
Williams, I. B., & Sons, Dover, N. H.

BELT LACING (Leather)
Chicago Rawhide Mfg. Co., 1305 Elston Ave., Chicago, Ill.
Williams, I. B., & Sons, Dover, N. H.

BELTING (Chain)
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

BELTING (Leather)
Chicago Rawhide Mfg. Co., 1305 Elston Ave., Chicago, Ill.
Williams, I. B., & Sons, Dover, N. H.

BENCHES AND FRAMES (Drawing)
Morgan Construction Co., Worcester, Mass.
Vaughn Machinery Co., The, Cuyahoga Falls, O.

BENDING AND STRAIGHTENING MACHINES
Cleveland Punch & Shear Works Co., 3917 St. Clair Ave., Cleveland, O.
Hinman, D. A., & Co., Sandwich, Ill.
Kane & Roach, Niagara and Shonnard Sts., Syracuse, N. Y.
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.
Long & Allstatter Co., Hamilton, O.
Sutton-Abramsen Engineering Co., Park Bldg., Pittsburgh, Pa.

BENZOL AND TOLUOL RECOVERY PLANTS
Koppers Co., The, Union Trust Bldg., Pittsburgh, Pa.

BILLETS (Forging)
Bethlehem Steel Co., Bethlehem, Pa.
Midvale Co., The, Nicetown, Philadelphia, Pa.

BILLETS (Forging, Alloy Steel)
Bethlehem Steel Co., Bethlehem, Pa.

BILLETS AND BLOOMS
American Rolling Mill Co., Middletown, O.
American Tube & Stamping Co., The, Bridgeport, Conn.
Andrews Steel Co., Newport, Ky.
Bethlehem Steel Co., Bethlehem, Pa.
Central Steel Co., The, Massillon, Ohio.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Illinois Steel Co., 208 South La Salle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Interstate Iron & Steel Co., 104 S. Michigan Ave., Chicago, Ill.
Wheeling Steel Corp., Wheeling, W. Va.
Wood, Alan, Iron & Steel Co., Widener Bldg., Philadelphia, Pa.

BIN GATES (Blast Furnace)
Freyn Engineering Co., 310 S. Michigan Ave., Chicago, Ill.

BLANKS (RAWHIDE, GEAR)
Chicago Rawhide Mfg. Co., The, 1305 Elston Ave., Chicago, Ill.

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